Mr. OVEREND asked whether his learned friend was about to contend that the opponents had no *locus standi*?

Serjeant BELLASIS replied in the negative. What he desired was, that the committee should now pass the preamble, and leave any differences between the promoters and the opponents to be afterwards settled, when the clauses came under consideration.

WEDNESDAY, JUNE 19.

Serjeant BELLASIS addressed the committee in reply. He submitted, in the first place, that the powers which the company originally obtained under their Act of Incorporation had been executed under very unfavourable circumstances to themselves, but with entire satisfaction to the town of Blackburn. The corporation presented a petition of most unusual length against the present bill, but in it they were unable to allege one ground of complaint against the company. There was only one witness—Mr. Brierley—who had any grievance to offer. That gentleman brought a bottle of water, which he stated was a fair sample of the quality of the water supplied to the town; but it appeared from his evidence that the water was only occasionally of that dark colour, and that his house was situated at the extreme end of the company's mains, so that, if anywhere impurities could be found, they might be expected there. The pipes were not always filled with water; and, probably, as they were not coated in the interior, corrosion might take place, and thus account for the discoloration of the water first sent through them afterwards. Mr. Brierley did his best to convince the committee that the company's water was intrinsically bad; but Mr. Rawlinson did not confirm his evidence, for, in answer to a question, he said, in reference to the water as it passed into the second reservoir, which now supplied Blackburn, no purer water could be got anywhere; it was beautiful, transparent, and soft. The second reservoir was the service-reservoir, and therefore it must necessarily follow that the bottle laid before the committee contained water which had been fouled by something in the pipes, and that it was an exceptional sample of the water as it reached the town. After dealing with some of the allegations in the petition, the learned serjeant referred to the charge, repeated by Mr. Overend, that the company were guilty of an act of bad faith towards the corporation; and that, if this bill passed, the purchase by them of the waterworks would be impossible. It was an entire misapprehension to suppose that, because the townships were included, therefore the corporation could not undertake the supply of water. There were many places where that was actually done. At Manchester, the corporation supplied water in twenty-four of the surrounding townships, not belonging to the borough; and the same thing, to a greater or less extent, occurred at Liverpool, Bradford, Bolton, &c. In truth, it must be so very frequently, if small places in the neighbourhood of large boroughs and towns were to be supplied at all; and it would be absurd to prohibit them from the benefits thus obtainable. Moreover, in the instance before the committee, the power given to the corporation of Blackburn was not to purchase the works of the company as they then were, but the clause was to the following effect:—"It shall be lawful for the corporation to purchase of and from the Blackburn Water-Works Company, and for the company to sell to the corporation, the works, property, rights, interests, and privileges, of or to which the said company shall, at the time of such purchase be seized, possessed of, or in any way entitled to at law or in equity, or in any way whatever;" and a subsequent clause enacted that, "after the execution of the deed of transfer, all the powers, &c. vested in the said company as shall at the time of the execution of such deed be in force and might have been executed by them, shall be transferred into and vested in the corporation, and such powers, rights, and privileges, shall be exercised by them," &c. It was never intended by the company to put an end to the powers thus bestowed, nor would this bill when passed have such an effect. The evidence adduced by the promoters had proved that the population of the town and neighbourhood of Blackburn was increasing very rapidly, that the present sources of supply of water were inadequate, and that it was absolutely necessary, looking to the future, that a more efficient supply should be secured. The only question was as to whether the plan now presented was a well-considered and suitable one, or whether, as the petition alleged, "the new works were badly devised and the proposed source of supply ill-chosen and inadequate." The learned serjeant recapitulated the main points of the scheme, and replied to the objections urged by Mr. Overend. Probably, he said, the Hoddlesden reservoir having been heretofore used for compensation purposes only, the same care to prevent the entrance of impurities had not hitherto been taken as would hereafter be necessary when the reservoir came to form a supply-reservoir for the town; but, he submitted that the company had ample powers under the Water Companies Clauses Consolidation Act, which was incorporated in this bill to prevent any noxious matters from getting into it, and of punishing any parties by whom it should be defiled. If the ashes which now found their way into it from the Vale Rock Mill were objectionable, the company would compensate the millowner and get rid of them; but, Mr. Bateman had expressed his belief that, notwithstanding that, the water would arrive at the town in a state of the greatest purity and entirely fit for drinking purposes. As to the existence of coal under the new reservoir, although the witnesses for the promoters had been cross-examined on the point, no evidence had been offered on the other side, and therefore it might be considered that that supposed objection had been abandoned. The committee had heard the reasons of the engineer for not covering the culvert, about which so much had been said: and, he thought they would be of opinion that that objection was completely answered. As to covering up the service-reservoir, it would be remembered that that reservoir was 69 acres in extent, and the proposal savoured something of absurdity.

Mr. RUSSELL said Mr. Rawlinson had never suggested that the Fishmoor reservoir should be covered, but he recommended a covered reservoir, in which the water should be kept after being filtered.

Serjeant BELLASIS admitted that, in some circumstances, it would be desirable to cover the service-reservoir; but where, as in this case, the service-reservoir was also used for storeage purposes, it was unadvisable, and could not be done. The most serious objection which had been urged against the scheme was that which related to the out-townships. The petition alleged that Blackburn was entitled to be supplied before the company were authorized to supply other places. Now, the whole of the five townships referred to were either practically a part of Blackburn, or were places from which the water was drawn for the supply of the borough. Blackburn had no natural right to this water; not a single drop of it would ever, except for the proposed works, reach that place. The water-shed was all in another direction; and therefore, so far as Blackburn was concerned, they were poaching upon their neighbours property in taking it. Blackburn was the centre of a populous district, every part of which was entitled to be considered in arranging a water supply for the inhabitants; and no good reason had been shown why the municipal boundaries of the borough should be taken as the limit of the company's operations. It was urged that the supply of the townships might become a burden to the corporation, if they should hereafter become the purchasers of the works; but here, again, there was a serious misapprehension, because what would be a profitable undertaking for the company could not be otherwise to the corporation. Moreover, the 36th section of the Water-Works Clauses Act provided that the undertakers, whether a corporation or a company, should not be compelled to lay down pipes for the supply of any place, unless they could be secured an annual rent equal to 10 per cent. upon the necessary outlay. This was a provision against any incumbrance from the townships in this respect; and he might mention that, in the case of Manchester, the corporation derived £40,000 a year from the supply to the surrounding townships, including the supply for trade purposes in the city not included in the rate. Then it was said that this was a matter which ought to be postponed——

The CHAIRMAN said, if the learned serjeant had any other point to submit, the committee would be glad to hear him, but it was not necessary to enlarge upon the question of postponing the matter.

Serjeant BELLASIS briefly referred to the financial part of the scheme, and concluded by submitting that, the company having, at considerable risk, carried on their undertaking to the entire satisfaction of the consumers, and having done so without deriving any unreasonable profit, were entitled, in their present application to Parliament, to receive more consideration than the petitioners were inclined so show them.

The room was then cleared, and the committee consulted for a few minutes. On the doors being opened,

The CHAIRMAN said: The committee have decided that the preamble is proved.

The clauses 1 to 64 were then gone through and agreed to.

On clause 65,

Mr. OVEREND said he wished to propose the following addition:—"Before the company supply any water, from the works to be constructed under the powers of this Act, for the domestic use of the inhabitants of the borough of Blackburn, they shall construct such sewers, or other works as shall effectually intercept, and for ever remove, all drainage and other fluid refuse from the factory known as the Vale Rock Mill, and the houses situated above the Hoddlesden reservoir, and all ashes, gas-tar, and other noxious matter from flowing into, mixing with, and contaminating the water to be supplied to the inhabitants of the said borough." In support of this proposition, he quoted the evidence of Mr. Bateman, who said it would be quite possible to effect this object, if it were found desirable, and he stated that the people of Blackburn were exceedingly desirous that it should be done. To show the importance of preserving the water from such contaminations as were proved to find their way into this reservoir, he quoted a passage from the report of Mr. Simon on the last two cholera epidemics of London as affected by the consumption of impure water, in which it was stated, that the mortality in one district was three and a half times greater among those who drank the water supplied by one company, than amongst those supplied by another company. He hoped the committee would insist upon this clause being introduced.

Serjeant BELLASIS opposed the clause on the ground that the Water-Works Clauses Act gave the company ample power to prevent any contamination of their water.

Mr. OVEREND said the company had for years had the powers which the General Act gave them, and yet the contamination of which he complained had been suffered to exist, and no effort made to put the Act in force. It was evident, therefore, that further legislation to meet this particular case was necessary. The Water-Works Clauses Act dealt with offences to be committed, but here there was a person who had a vested right, recognized, and preserved by the bill to cast refuse into the reservoir?

The room was then cleared. On the parties being called in,

The CHAIRMAN said the committee wished to be informed upon the fact, whether the owner of the Vale Rock Mill had a right by prescription, or by law to send his sewerage into the stream leading to the reservoir?

Serjeant BELLASIS said he had no hesitation in answering that question in the negative, and even if he had, this Act of Parliament would entirely prevent it for the future.

Mr. OVEREND, on the contrary, considered that he had an undoubted right to do so. The mill was built across the stream, and all the privies were made to drain at once into it. This right, the millowner had enjoyed for a long time previous to the water-works coming into operation.

The CHAIRMAN: If he has the right, he will not come within the terms of the Water-Works Clauses Act.

Mr. OVEREND said he could prove that he had been in the habit of doing so for thirty years, and twenty years would give him the right to continue it.

After some further conversation, Serjeant BELLASIS said it was perfectly clear that, if the water was contaminated, as alleged on the other side, means should be taken to prevent it in future, and therefore he would consent to a clause confining the obligations of the company to intercepting the refuse from the mill, but not to extend to any of the villages round.

The CHAIRMAN: We shall confine it to the mill.

The clause was then postponed.

On clause 75,

Serjeant BELLASIS said it was usual to give the company a maximum above the actual charge made by them so as to provide for any contingencies that might arise. In this case, it was fixed at 6 per cent. upon the rack-rent.

Mr. OVEREND said he did not propose to interfere with that, but he objected to the proviso that the company should not be bound to furnish a supply where the annual water-rate would be less than 10s. if paid in advance, and 12s. in arrear. He desired to have the minimum rate fixed at 6s. and 8s. respectively. It was of the utmost importance that every facility should be given to the poorer classes for obtaining a good supply of water. In Blackburn there were 12,688 houses, at a rent of £3 and under; 2871, at £4 and under; 5126, at £5 and under; and, 8645, at £6 and under. The limitation which he proposed, was in accordance with the rates actually charged by the company during the last fifteen years, and which it was fair to presume they had found remunerative.

Serjeant BELLASIS objected to the amendment. In all cases, the rates for water on houses under £7, were paid by the landlord, so that the boon would not be to the poorer classes, as his learned friend had suggested. In the House of Lords this matter was fully discussed; and, while the maximum in the bill was allowed the company, the obligation was imposed upon them to supply one water-closet and a fixed bath in each house gratuitously. The company had never charged up to their maximum; but, it was desirable they should have it, in order to meet possible contingencies.

Mr. *Bateman* was recalled, and examined at some length as to the rates in surrounding towns.

Mr. *Brierley* and Mr. *Rawlinson* were also recalled, and examined on the same point, and counsel on both sides having addressed the committee, the room was again cleared; on the parties being called in,

The CHAIRMAN said the committee had decided that the clause, as printed, should stand part of the bill.

The remaining clauses were gone through and agreed to.

Serjeant BELLASIS said his learned friend had handed him nine manuscript clauses, which it was intended to propose. He had not had time to examine them, and he suggested that it would be advisable to adjourn further proceedings till the following day.

The committee adjourned accordingly.

THURSDAY, JUNE 20.

Serjeant BELLASIS brought up the amendment proposed to the clause respecting the Hoddlesden reservoir, which, after some discussion, was agreed to.

Mr. RUSSELL proposed a clause requiring the company to filter all the water supplied by them for domestic use before passing into the pipes for distribution, and that such filtered water should not be exposed in any open tank after being filtered. The clause, he said, was not an unusual one and the committee had had evidence before them as to the necessity of it. In most cases, where the water was collected from the surface and impounded, filtering was had recourse to. The plan was adopted at Liverpool, Chester, London, Preston, Gorbals, Kilmarnock, and was in course of being carried out at Wigan. Mr. Bateman had stated that the cost of constructing the necessary works would be about £2000, and he (Mr. Russell) was informed that the annual working expenses would be about £250, assuming the full quantity of two million gallons ultimately to be supplied by the company were filtered.

Serjeant BELLASIS said the system, though not a costly one, was extremely troublesome, and the company had not found it necessary to have recourse to it, the water, upon subsidence, being beautifully pure.

Mr. *Bateman* recalled, and examined by Serjeant BELLASIS.

There are some cases in which water companies are compelled to filter, but in the majority of cases it is optional. The Gorbals water is not filtered in the ordinary sense; it is a mere process of straining. I have here a list of thirty towns and cities, containing a population of three millions, the whole of which I have myself supplied with water, or been in some way connected with it. In only three of these cases is there any filtration at all. We gave up filtering at Blackburn, because we found we could produce equally as good water without it. The cost of filtration-works would be about £2000, and the annual working expenses £150 for each million gallons of water filtered.

Cross-examined by Mr. RUSSELL: If the water in the Fishmoor reservoir should ever become turbid through floods, we can obtain water from the other two reservoirs for domestic use. The arrangement of filtration is a clumsy one, resorted to for the purpose of making good water. We find that subsidence is equally efficacious. When water is admitted in shallow sheets upon beds of sand, the heat of the sun causes vegetation to take place, which has to be scraped off from time to time, and the beds frequently renewed. My system of gravitation water-works is much better than any filtering process.

Mr. *Rawlinson* recalled, and examined by Mr. RUSSELL.

In my opinion, the system proposed to be adopted by Mr. Bateman will not prevent the necessity for filtration. It is a mere mechanical process, which does not even remove the flocculent matters. Water which becomes foul as this does will not be purified by exposure, except in cases like Loch Katrine, where there is great surface and depth. At Liverpool, the water is filtered in the Rivington reservoir, but it is then passed along mains, and into an uncovered reservoir, to take off the pressure; and it becomes fouled after filtration, and the complaints in Liverpool are loud in consequence. I think it ought to be compulsory upon the Blackburn company to filter their water, and keep it in a covered reservoir. The London companies declared, with the utmost pertinacity, that the water formerly supplied by them was good; but they were compelled to make an alteration, and the mortality in London has been very much reduced since then.

Cross-examined by Serjeant BELLASIS: Under the circumstances in which this water is collected, it ought always to be filtered. At Chorley, the main-pipes under four inches became furred up with zinc and oxide of iron in the course of two years, in consequence of the non-filtration of the water. When water is soft, it will oxidize the pipes if they are unprotected, and the supply is intermittent It does not furr iron if constantly charged.

Mr. *Carr*, examined by Mr. JONES.

I am a ginger-beer maker, residing at Blackburn, and a large consumer of water in my business, which I require should be very pure. I find it necessary to filter the company's water which I use. Sometimes it contains a great deal of impurity, and I have to clean out my filters every week in hot weather. This [producing a bottle] is the settling which I got from about 700 or 800 gallons of water last week.

Sir T. BURKE: Is that all you got out of that quantity?

Witness: Thereabouts; I lost very little.

Examination continued: I should say I often run 50 or 100 gallons away before I can use it. It is worse in rainy weather than any other time.

Cross-examined by Serjeant BELLASIS: I have used the company's water about twelve months. My house is in an unfinished street. The company's main terminates at my house. I never made any complaint to the company.

The CHAIRMAN: The committee decide to reject the clause.

Mr. RUSSELL proposed a clause, enacting that the company should supply water for the purpose of cleansing the sewers and drains, watering the streets, and for the use of baths and washhouses, at a charge not exceeding 4d. per 1000 gallons.

Serjeant BELLASIS said all these matters were provided for in the General Act, under the provisions of which the corporation would be much better off than they could be by this clause.

The CHAIRMAN: I do not think you need trouble yourself to argue it; the clause is rejected.

Mr. RUSSELL said there was only one other clause he would trouble the committee with. They had already learnt that the particular ground upon which the corporation opposed the preamble was, that they were advised, in the event of the limits of the company being extended beyond the borough, it would be absolutely out of their power, in point of law, as they were at present constituted, to become owners of the water-works by purchase. The works were originally established to supply the borough, and the powers of the corporation did not extend beyond it. He understood, from his learned friend, Serjeant Bellasis, that the company did not desire by this bill to abridge any of the powers of the corporation, and, therefore, he assumed there would be no objection to the clause he was about to propose—viz., that the provisions in the Blackburn Improvement Act, giving the corporation power to become purchasers of the water-works, as originally constructed, should be continued, so as to enable them still to become the purchasers after this bill became law; and should extend to all the works authorized to be executed by this Act.

Serjeant BELLASIS said he thought the proposition was not an unreasonable one; but, unfortunately for his learned friend, it was not possible to carry it out in the way he suggested. One of the powers sought to be introduced was a power to tax the inhabitants; in fact (assuming the power to purchase under the Blackburn Improvement Act to be annulled by this bill), they were now asked to rescuscitate a rating clause. To do so, it would be necessary, in the first place, to go before the standing orders committee, without whose previous consent, this committee could not entertain the question.

After some conversation on the subject, the chairman retired to consult the examiner on private bills; and, on his return, stated that the committee had not the power to entertain the question. The proper mode of proceeding would be to adjourn the matter to a future day; and, in the meantime, for the parties to petition the House for leave to insert an additional provision in the bill.

The committee then adjourned until Wednesday, the 3rd of July.

(*Before Mr.* BULLER, *Chairman; Mr.* ROBARTES, *Mr.* HANBURY, *Mr.* H. B. SHERIDAN, *and Mr.* FOLJAMBE.)

PORTSEA GAS BILL.

FRIDAY, JUNE 14.

Mr. BAXTER appeared for the promoters of the bill, and Mr. CRIPPS for the petitioners.

Mr. BAXTER said the Act was "to increase the capital and amend the powers of the Portsea Island Gaslight Company." The objects of the bill were threefold—first, to enable the company to raise a sum of £30,000, to provide adequately for the increased and still increasing demand for gas in the district supplied by them; second, to capitalize £9000, which they had spent out of the profits of the company, in increasing the value of the works and making them more remunerative; and the third and last object of the bill was to bring it within the provisions of modern legislation in regard to gas companies. There was no petition against the preamble. The bill, when before a committee of the House of Lords, had been opposed, and very stoutly opposed, by the corporation of Portsmouth, who had been heard for two days against it. But the end of that opposition was, that an agreement had been come to, the substance of which was embodied in the present bill. But it might be necessary, although there was no petition on the part of the corporation to the preamble, that he should state the nature of the difference which existed between himself and the learned counsel on the other side. To one alteration which was now proposed to be made in the preamble, the petitioners did not object. The preamble recited that, in addition to £30,000, the company had laid out a further sum of £9000 from the profits of the undertaking. The promoters now desired to alter the latter sum into £9012. 10s.—a very small alteration, certainly, and quite within the actual outlay, because it was proved that they had laid out the sum of £9372. The particulars, however, having been questioned, they had cut the amount down to £9000; but the additional £12s. 10s., which they now proposed to add, would enable them to divide a precise amount among the number of shareholders. The 17th clause of the bill regulated the price of gas.

Mr. CRIPPS said the opposition had no objection to the 17th clause.

Mr. BAXTER said, that clause, then, not being opposed, the only, or at all events, the chief opposition to the bill would arise on the 18th clause. That clause fixed the charge for the public lamps at prices not exceeding those at present charged, and gave the improvement commissioners a power of appeal thereon to the quarter sessions. Now, the promoters alleged that the simple terms of this agreement were to the effect that they were not to advance the price of the public lamps, and that the appeal only was to lie in the event of their advancing them. No doubt the learned counsel on the other side would contend that they were prohibited from advancing the price of the gas supplied to the public lights, and that he would take his stand on the petition presented by the petitioners, which said that the clauses had been already agreed to, and that it would not be right to alter any of those clauses now. But the promoters contended, on the other hand, that, even upon the principles of common sense, if there was to be an appeal, it ought to be one by either party, so as to let the quarter sessions determine the cause of dispute between them. As matters stood in the bill at present, the promoters were prohibited from advancing the rate, and the petitioners were at liberty to appeal and attack the promoters. The promoters contended that this was not what was intended at the time the compromise was effected, and they thought that the 18th clause should be made to read thus: "That the maximum price to be charged for the public lamps should not exceed the price or prices now charged for the same respectively, except in the case of an increase in the price of gas by meter to consumers generally; and that, in case of any advance, it should be lawful for the improvement commissioners for any district within the limits of the Act to give notice to the company of their intention to appeal against the rate charged for gas supplied to them for lighting the public lamps." In this way, the clause would provide that the commissioners should appeal only in the event of the company making an advance; and the promoters contended that the clause, as now proposed to be amended in this manner, was fair and reasonable, that it was an amendment of which the petitioners could not complain, and that it was one which coincided with every fair view of the matter. Then, upon the 28th section of the bill, another question was raised. That section contained an alteration which had been proposed by the opponents of the measure. The petition presented by the corporation of Portsmouth stated that the bill, as it now stood, contained certain clauses: that those clauses and provisions had been inserted, by agreement, during the progress of the measure through the other House of Parliament; that they thought those clauses most important; and they humbly submitted that any alteration therein would be detrimental to the public interests, and that no alteration ought to be allowed to be made therein at the instance of the company. Yet, notwithstanding this petition, they proposed an alteration in the 28th section.

Mr. CRIPPS said that his clients did not propose any alteration in the bill as it now stood.

Mr. BAXTER said the 28th section contained a power which was conceded in the Metropolitan Act. It was therein stipulated that the owner or occupier should, before the pipes were laid, give to the gas company such security for the payment of the rates of the gas to be supplied to him as he and the gas company should agree upon. This was only perfectly fair, because, if the company were bound to supply, it was only reasonable that they should have some security for the payment of the rent, inasmuch as there were many parties who would want a supply, and who would never think of paying for that supply afterwards. The next clause

of the Metropolitan Act provided, that if the parties could not agree respecting the security, the same should be determined by a magistrate, that the security might consist of a deposit with the gas company, or of a prepayment to the gas company, whichever the magistrate might consider sufficient and reasonable, and that the determination of the magistrate should be binding on all parties. Now, the promoters had copied the 28th clause word for word from the Metropolitan Act, thereby acknowledging that the magistrate should determine the nature of the security, in case of dispute, but the corporation proposed to put in the words, "What security, if any," so as to put it that the magistrate need not give any security whatever, if he thought proper. This was contrary to right reason and common sense. It was quite clear that, as the law compelled the company to supply the gas, it ought to secure them in the payment of the rent, and it ought not to be in the power of the magistrate to say that they should have no security if they desired to have security. The proviso now sought to be inserted had not been put into the Metropolitan Act, and the promoters objected to it here, contending that the words "if any" ought not to be introduced into the clause.

Mr. CRIPPS said he would subsequently state his objections to any alteration being made in the bill, those objections applying not only to this measure, but to every other the clauses of which had been settled by arrangement before either branch of the Legislature.

William Murray, Esq., M.P., examined by Mr. BAXTER.

I am a shareholder in the Portsea Island Gas Light Company. The statements in the preamble of the present bill are perfectly true in reference to the capital raised and required. I am an auditor of the company, and have been so since the year 1844. I am pretty well acquainted with the finances of the company. The company have had their works very considerably increased since the time of the Crimean war. They have had to supply the dockyards, and various barracks, the garrison, the royal marine departments, and other works; and, as the Government are building forts and barracks, and extending their operations at Cumberland fort, we shall be called upon to supply these new fortifications as well as Cumberland fort with gas. Taking the present census, and comparing it with the last, there has been an increase in the population to the amount of 20,000—from 70,000 to 90,000. Further capital will be required by us, in consequence of this increase. We are at the present moment called upon to lay out £12,000 upon a new gasometer. The money raised by us in 1852 was expended in 1852 and 1853.

Cross-examined by Mr. CRIPPS: I am a shareholder in the company and reside in London. I hold one-twelfth, and different other parties hold no more. A considerable portion of the shares are not held by parties residing in London, but by parties residing in Norwich. I am not aware that the directors of the company who reside at Portsmouth have been unwilling to make any alteration in the bill as it left the House of Lords; but, I heard that that was so this morning. I have heard them say that they approved of the bill. I saw this morning the alteration proposed to be made in the bill. It was in the handwriting of the chairman of the directors, and had reference to the power of appeal. It was a proviso to be added at the end of the clause, that the maximum price to be charged for the public lamps was not to exceed the present price, "except in the case of an increase in the price of gas by meter to consumers generally."

The committee declared the preamble proved. The clauses were then gone through. All the clauses, down to clause 17, were agreed to, without opposition. On clause 18 being read,

Mr. CRIPPS said that this bill had been brought, first of all, into the House of Lords, and it was there opposed by the corporation of Portsmouth. A good deal of evidence was given, and some discussion had taken place; but, after the first day, the promoters entered into an arrangement, whereby they agreed to meet the views of the opponents. Concessions were, in fact, made on both sides, and the result was, that the opposition was withdrawn on the part of the corporation. He (Mr. Cripps) was quite prepared, on this point, to refer to the same record—that of the shorthand writer—to which Mr. Baxter had referred as embodying, not the whole terms of the arrangement, but the substance of what Mr. Burke had stated upon the occasion. Mr. Burke's words were, that "all the points of difference had been settled"—that "all the principal matters had been conceded." Upon minor matters there might have been some dispute, but these were waived upon the chairman asking if they had come to a perfect arrangement. In point of fact, there had been an entire arrangement, on the faith of which the opposition was withdrawn. Before meeting upon the second day, all the clauses were agreed upon, so that, when the parties met, the clauses were put in, and all opposition was immediately withdrawn. The committee would see that the terms of the agreement were expressly stated in the clause, that the present price should not be exceeded in the public lamps. Although the corporation felt themselves bound, as far as possible, to protect the private consumers, yet the question of the public lights was chiefly before them, representing as they did the principal public body in the town of Portsmouth. The clause was then agreed upon, and finally settled. That clause, which was the 18th, carried upon the face of it the terms of the agreement in the strongest possible way. It said, that "the maximum price to be charged for the public lamps should not exceed the price or prices now charged for the same respectively;" and it went on to say that it should be lawful to appeal against the rate to the quarter sessions of Portsmouth. The object was that, under no circumstances, was the maximum price in future to exceed the price at which it was when the promoters obtained their bill; and that, if circumstances should occur, making a reduction desirable for the private consumers, parties might, by appealing to the court of quarter sessions, and acting on behalf of the corporation, go and get that reduction made. The 16th clause provided that the price at which gas should be sold by the company within the limits of the Act should not exceed 4s. 6d. per 1000 cubic feet, except in the event of an increase in the price of freight, coals, or other materials or labour, when the company might from time to time charge any further sum not exceeding, with the price then charged, 5s. 6d. per 1000 cubic feet. Then the 17th clause showed that the possible increase of price had been duly and fully considered, but that that increase was to be limited to the private consumers only; and, after having provided for that, and with a full knowledge of that provision, the 18th section distinctly provided that "the maximum price to be charged for the public lamps should not exceed the price or prices now charged for the same respectively." Nothing could be clearer than the intention, nothing clearer than these expressions, that though there might be circumstances which might render it necessary to increase the price to the private consumers, yet under no circumstances was the price for the public lights to be advanced. He (Mr. Cripps) stood in the broadest possible way upon public grounds in this matter. He contended that it would be intolerable, after the expression of opinion given in one House of Parliament, after the opponents had compromised the matter, after the points in dispute had been withdrawn, and after the clauses they wished to have inserted had not been brought forward, that the promoters should now come here and endeavour to reopen the whole discussion. If it were allowed to be reopened, the precedent would be a most intolerable one. If the matter had not been agreed upon, then it might be reasonable enough to reopen it; but, that having been agreed upon, would it now be reasonable to bring it again under discussion? He submitted that it would be most unreasonable to do anything of the kind. Why should they now propose to put in words that would have the effect of totally altering the clause? The 18th clause was distinct. It said that "the maximum price to be charged for the public lamps should not exceed the price at present charged;" and now it was proposed to add these words: "except in the case of an increase in the price of gas by meter to consumers generally." This was to say, that the company wanted to assimilate the price of the public lamps to that of the private consumer; for they said that, if it might be increased to the private consumer, it might also be increased to the public. But it was agreed that there should be no increase to the public; and yet they now wanted to put the public on the same level as the private consumer. This was a bill promoted by the gas company. It was a parliamentary application by them, and by them alone. *Non constat* that the committee of the other House would ever have consented to pass the bill, if the clauses, as now proposed, had been brought forward in their present shape. He hoped the committee of the House of Commons would not depart from all principle and precedent by the adoption of the course now urged upon them, because the matter had already been agreed and settled, and upon that agreement and settlement he took his stand.

Mr. BAXTER said the promoters did not now propose to go beyond the terms of the agreement in the slightest degree. If the learned counsel on the other side wished to take his stand on the very words of his bond — namely, that the maximum price in future should not exceed the present price, let him do so. That was the letter of the bond. If he was content to take that *simpliciter*, he (Mr. Baxter) was also content. But the amendment made in the previous clause, and to which his learned friend had assented, showed that the 18th clause had been drawn up hastily, and that the matter had not been fully discussed. Indeed, the committee would see at once that, as the clause stood, at present, it would not be fair to the company, and that it had not been truly represented by the learned counsel. As it stood, it would be competent for the learned counsel's clients to-morrow to give notice to the company that they meant to apply for a reduction of the price for the public lamps. But the learned counsel did not himself contend for such a right as that. He merely said that if the price could be reduced to the public, then his clients would have a right to seek for that reduction. That was the case he made, but that was not the entire of the clause. The clause as it stood at present empowered him to go at once for the reduction. He (Mr. Baxter) was ready, if his learned friend wanted the maximum price to be a stern agreement, never to be varied—he was content to take it so; but, if he meant to have an appeal, it should be an appeal that was mutual, open to both parties. If he meant to vary the price, there should be a power given to the tribunal to vary it either upwards or downwards; but the clause, as it stood, did not support that view, neither did it bear out the learned counsel's argument. If he sought for an appeal at all, let him make it a common sense appeal—namely, that the tribunal should make the price higher or lower, as it should see fit. Let there be an appeal, by all means, with a power to the tribunal to lower the price to the opponents, and a power also to raise it on the part of the company. He would put it simply so. If the learned counsel liked to have the present rate fixed and permanent, he (Mr. Baxter) would be content; but, if he sought for an appeal, then, on the appeal being made, let the company have the power to demand a rise in the same manner as the opponents would have the power to demand a reduction.

Mr. CRIPPS said that if Mr. Baxter wished to retain a power of appeal on the part of his clients, the opponents were quite content to grant that power. But the clause was plain, that the lights to the public should not be increased beyond their present price. If the recorder of the borough of Portsmouth should think there were circumstances enabling the company to reduce the price, then that reduction would have to be made, but, under no circumstances, should there be an increase; and there was nothing now advanced by the opponents which was in the slightest degree inconsistent with the clause as agreed upon, and upon which agreement the opposition in the Lords had been withdrawn. There was nothing whatever which could justify any difference of opinion now after what had been mutually settled upon in the Lords. He concluded by observing that he would reserve any questions of fact until afterwards, in case the committee should think it necessary that questions of that nature should be reopened at all.

The room was then cleared. On our readmission,

The CHAIRMAN said the committee had decided that they could not alter the clauses, as those clauses had been agreed upon in the House of Lords.

The whole of the remaining clauses of the bill were then agreed to without any opposition.

WIGAN GAS, METER, AND FITTING BILL.

FRIDAY, JUNE 14.

Mr. WYATT appeared for the promoters; Mr. LOCH, on behalf of the corporation of Wigan; and Mr. GREGORY, for the ratepayers of Ince.

Mr. WYATT said that this bill was presented by the Wigan Gas, Meter, and Fitting Company, and that it was an Act for better supplying with gas the borough of Wigan, and other places adjacent thereto, in the county palatine of Lancaster. The petition which had been presented by the corporation of Wigan was a mere watching petition, and was, in fact, in favour of the bill. It would be convenient that he should give a short history of the company and their doings, and, with that view, it would be necessary to divide the bill into two natural parts—first, that portion which related to the capital of the company, and with which the public were not concerned; and then to explain the nature of the works, and the powers proposed to be conferred upon the company, which did, to a certain extent, affect the public. The Wigan company was first incorporated in the year 1822, by an Act of 3rd Geo. IV. At that time, the subject of gas was very little understood, and, therefore, the capital was small. It was £10,000 only, with borrowing powers to the extent of £2500. They commenced to supply gas in the following year. The supply was comparatively small at first, but it outgrew the capabilities of the company, who set apart a portion of their profits year by year, in order to accommodate the inhabitants. The company consisted of several of the leading inhabitants of the town, some of whom were large owners of property, and they, being more mindful of the wants of the place than careful about making a dividend, it would not surprise the committee to hear that, for some years, they had realized

little or no dividend. Anxious to carry out their promised intention, they applied portions of their profits to the extension of the works. They continued to supply gas, but, in doing so, they exhausted all their capital, and also all their borrowing powers. In the year 1855, a company was formed under the Limited Liability Act, and that company was known by the name of "The Gas, Meter, and Fitting Company." Their object was this:—A great number of the inhabitants were most anxious to be supplied with gas, but it was a serious matter to get the necessary fittings for the supply, because many of these people were weekly tenants, who were liable to be removed, and they, in the absence of the fittings, were deprived of the advantages of a supply of gas. To meet that difficulty, and also that the company might have the benefit of an increase in the number of their consumers, the company in question was formed, chiefly of the shareholders of the existing company, to supply the gas-fittings. That company took power to raise £3125 of capital, with power also to increase it to £10,000, and that capital had been raised and expended for the objects for which they had been incorporated. Thus the two companies were, in truth, only one, and they were now driven to Parliament for extended powers, not only to supply the borough of Wigan, but also for supplying the district adjacent to it, and for placing the whole under one trust, in order to avoid the inconvenience of separate books and accounts. And he might here state that they had availed themselves of the general Act, because the sum they required for their purposes was so small that it was not worth their while to apply for a special Act of Parliament. The gas company was originally formed to supply the borough of Wigan only, but the town had very rapidly increased in population; gas was almost a necessary of life, and was highly appreciated by the inhabitants round the borough. Those inhabitants had applied to the company to be supplied from time to time. Although it was out of the power of the company, according to the Act of Parliament, to comply with those applications, yet, until a recent decision had been given in the courts of law, they thought they had full powers to lay pipes in the public streets. They, therefore, at the earnest request of the inhabitants, laid their pipes, and had been supplying them with gas very much to their satisfaction; and no complaint had ever yet been raised, either as to the quantity or quality of the gas supplied in Wigan. But a recent division in the courts of law having been given, that local authorities had not the power to grant permission for laying pipes, the company were in this dilemma: that their pipes might be destroyed or interfered with, and the inhabitants were liable to be subjected to great inconvenience, unless the powers now sought for were confirmed by an Act of Parliament. When the company commenced operations, they charged 15s. per 1000 cubic feet for gas.

Mr. Loch said he was not sure that all parties were prepared at once to proceed. The bill was unopposed when before the House of Lords, but various clauses were then introduced, which materially altered the character of the measure. It was there proposed that the promoters should obtain leave to bring in an additional provision, to the effect that they should have power to sell the works to the local board. Permission was, no doubt, given by the House of Commons.

The Chairman said he held the order of the House in his hand; it was to the effect that the standing orders would be suspended, in order to allow the proviso to be inserted, on condition that the alteration was inserted twice in the local newspapers, and that a meeting of the inhabitants was called to consider the subject.

Mr. Loch said that notice had been given of the intention of the promoters to introduce the clause in question, and it would be well now to see whether they had complied with the requirements of the standing orders committee, and whether the clause they proposed to introduce was in favour with the inhabitants of Wigan.

Mr. Wyatt said that, previous to going into that point, there was a very important matter to be settled by evidence, and he had all his witnesses present to be examined upon it.

Mr. Sheridan asked whether the notice should not have been given prior to the present inquiry?

Mr. Wyatt said that, if the inhabitants of Wigan decided against the clause, the promoters would not propose to have it inserted; in fact, they did not care one iota about it. The corporation, who were petitioners, wanted a permissive power enabling them to acquire possession of the works, and for this reason—that there were various differences at times between gas companies and local boards. The standing orders committee saw no objection to the insertion of the clause, and what he should propose to do was, to ask the committee to hear his case upon the part of the promoters, and then adjourn the inquiry until after the decision of the town had been taken on the question. If they should adopt this course, it would not occupy much of their time, on a future occasion, to decide whether this permissive power should be inserted in the bill. This was a bill which merely empowered the company to rearrange their capital, against which not one word was said in the petition presented on the part of the opponents. The only question involved in it was the propriety and necessity of giving a better supply of gas to the neighbouring districts. The learned counsel on the other side was appearing, technically, for four of the outlying parishes, which parishes had been absolutely beseeching the gas company to supply them with gas. Unless, then, they were not prepared on the other side to proceed with their opposition, there was no reason whatever for adjourning the case at this stage. The permissive power to transfer the works had really nothing to do with the question now before the committee.

The Chairman said there appeared no doubt about one fact, that the promoters of the bill had applied to have an additional provision inserted, and that, according to the decision of the standing orders committee, that provision could not be inserted unless certain conditions had first been complied with.

Mr. Loch replied that the committee could not proceed any further until that condition had been complied with.

Mr. Wyatt said the provision in question was not in the bill at present, and therefore the committee had nothing to do with it, and moreover the provision had nothing whatever to do with the other parts of the bill. It was a provision in itself, and the policy of inserting it would have to be decided by the committee, at the proper time. He did not ask them to consider it at all at present. *Non constat* that he should ever ask them to do so, because the inhabitants had to be consulted on the subject; and, if their decision was adverse, it was most probable that the clause would be altogether abandoned by the promoters.

The Chairman thought the committee ought to know what the provision specifically proposed to do.

Mr. Wyatt replied that it did not in any way affect the preamble, and technically the matter was not before the committee in any shape. He did not ask them at present to put any new clause into the bill. It was merely a permissive power which was sought, and which involved no question of principle.

Mr. Loch said it contained a power to sell, and to make a rate for the purchase; and, if such a power as that did not involve a question of principle, he knew not what did.

Mr. Wyatt said the petition which had been presented in favour of the bill was called the petition of ratepayers and others in the borough of Wigan; and they stated who they were; the names of the several parties were given, and where they resided. There was not a single ratepayer in the borough of Wigan a petitioner against the bill. On the contrary, the corporation of the town were present in support of it. The mayor and the town-clerk were there, to watch the proceedings generally, and to prevent any clause from being inserted which might operate injuriously to the interests of the inhabitants. If he were driven to the proof, he would show, beyond all doubt, that the people of the town were unanimously in favour of the bill, and that the corporation were there to support the measure, because not one word could be said against either the quantity or the quality of the gas supplied, or the price which had been charged for it. Wigan was, in fact, better supplied than any other town in the kingdom, and at a lower rate. The proprietors of some coal-mines, for some reason or other, had got up a petition against the bill; but not one of the townships was represented by the opposition in the manner required by the standing orders.

The Chairman said that the committee were of opinion that they could not proceed with this bill in its present imperfect shape. They would adjourn for a fortnight, and then meet in order to consider the bill in its perfect shape.

Monday, June 24.

Mr. Pickering, Q.C., and Mr. Webster, now appeared for the promoters; Serjeant Wrangham for landowners in Pemberton and Ince; and Mr. Loch on behalf of the corporation of Wigan.

Mr. Pickering, in opening the case, recapitulated the facts submitted to the committee at their last meeting by Mr. Wyatt, in reference to the history of the two companies. The object of the bill, he said, was to incorporate the Wigan Gas, Meter, and Fitting Company by the name of the Wigan Gas Company, and that the Wigan Gaslight Company should be dissolved, and all its powers, manufactory, gas-works, buildings, pipes, plant, and undertaking should be transferred to and rest in the Wigan Gas, Meter, and Fitting Company by its new name of the Wigan Gas Company, the consideration being that each shareholder of the Wigan Gaslight Company should receive two shares of £10 each in the Wigan Gas Company, in exchange for every share held by him in the Wigan Gaslight Company. It was also intended to give the promoters power to raise additional capital; but, upon that point, he would not trouble the committee, as there was no opposition to the bill as far as that was concerned. The amount of capital had been fixed by Lord Redesdale, and there was no dispute upon the subject; in fact, it did not appear to him that there was any objection by the petitioners to the preamble of the bill. In accordance with the order made by the House of Commons, the condition upon which the additional provision for power to sell to the corporation might be inserted had been complied with, since the committee last assembled; and, at a public meeting of the ratepayers of the borough, the feeling was unanimous in favour of the provision, should it meet with the approval of the committee. He would now call attention to the only petition against the bill. It purported to be a petition of the ratepayers and owners of property in Ince-within-Mackerfield, Pemberton, Aspull, Standish, &c., &c., and in the borough of Wigan. With regard to Standish, he might state that the company had had a very strong representation made to them of the desire of the inhabitants to be included in the bill; and there was actually no person resident there who petitioned against it; and, in reference to Pemberton, there was but one. The opposition, indeed, appeared to rest with two companies—the Kirkless Hall Coal Company and the Cannel Coal Company, who thought that they should be injuriously affected by some of the clauses of the bill. The grounds of their apprehension were not specifically stated, and he felt that, under the circumstances of the case, he might take exception to their appearing on such a general allegation as that contained in the petition. They complained that the bill, against which they did not petition the House of Lords, had been materially altered in character since it was introduced, and that many amendments were made in it which would be prejudicial to them. Amongst these, they urged that a distinctive charge for gas had been inserted in favour of the borough of Wigan, and against all the other townships—that is to say, that the maximum charge in the borough was fixed at 4s. 2d., and in the townships 5s. 6d. per 1000. Upon this point, he should be prepared to take the opinion of the committee, when the proper time arrived. It was perfectly true that it was proposed to make these distinctive charges, and he believed there never was a bill presented to Parliament in which it was not proposed to charge a different rate in the outlying and more scattered portions of the district supplied by the promoters. There was always a greater outlay required in mains; the leakage was greater in proportion to the distance over which the gas had to traverse, and the general expenses of the company increased. The petitioners further complained that, if the townships mentioned in the 4th clause were included in the bill, it would prevent such townships from being supplied by any other company, and they would, therefore, be entirely at the mercy of the promoters, who proposed to charge them at a higher rate than they supplied the borough of Wigan at, the circumstances of the case not being such as to warrant their being placed in such a disadvantageous position. If this sort of argument were to prevail, Parliament could never sanction the existence of a new company, because, *pro tanto*, where gas or water-works were once established, it might always be said to be an obstacle in the way of a rival company starting. The petitioners complained that a power was given in the bill for the authorities of the borough of Wigan to test the quality of the company's gas, but no such provision was made in reference to the out-townships. Now, that was perfectly true, but if any question arose upon it, the promoters would have no objection that the board of guardians in those townships should have similar powers to those conferred in this respect upon the corporation of Wigan, for it certainly did not seem to be a very unreasonable request on the part of the petitioners. The next complaint was, that the bill made it obligatory upon the promoters to light all the streets and roads in the borough, and limited the price to be paid for such lights, but such obligation did not extend to the townships, so that it would be entirely optional on the company to supply them or not, and in the event of their undertaking to do so, there was no limitation as to the price they should charge. This statement was also true, and the answer was that in the borough of Wigan there were mains in nearly all the public thoroughfares, and there was, therefore, no difficulty in the company coming under an obligation to supply all the lamps. But, when they came to the townships, there were many places where the com-

pany's mains did not go, and where, for a considerable distance, there was not a single house, and it would be unreasonable to expect the company to lay down mains for the supply of the public lamps in places where there was not likely to be any private consumption. The area of the borough was 2700 acres, and the population upwards of 37,000, whereas, in the townships, there were 30,000 acres, and a population of only about 50,000. He would say, on behalf of the company, that they would have no objection to its being made obligatory upon them to supply the public lamps, wherever their pipes were laid; but, to make it compulsory in other places, was unreasonable and unjust. Then, the petitioners complained that the bill made it obligatory upon the company to supply gas to all premises in the borough which were within 100 yards of their existing mains, and provided penalties in default of their doing so, but no provision of that character was made for the out-townships. Then, they said that the company were bound not to interfere with the sewers of the local board, that they were to deposit a map showing the position of their mains in the borough, and there were also clauses for the protection of the water-pipes belonging to the corporation. Now, as far as the map was concerned, he was quite willing that it should apply to the whole of the district; but, in regard to sewerage and water-pipes, no provision was necessary for the out-townships as there were none in existence there. The company were also quite willing to supply gas to private consumers in the out-townships in the mode and under the circumstances proposed in clause 53. The clauses in reference to sewerage and water-pipes were inserted at the instance of the corporation, who had expended no less than £150,000 for the supply of the borough with water, and were therefore naturally anxious for the protection of their mains; but, that could not at all apply to the district represented by the petitioners. Then came the objection, to which reference had before been made, viz., to the provision for vesting the gas-works in the hands of the corporation. The ground of this objection was that the petitioners were afraid that they should be brought within the corporation, and should be liable to have their rates raised to pay expenses incurred solely for the benefit of the borough. The corporation supplied the borough with water, and the inhabitants had to pay a water-rate. They had also to pay a sewer-rate, but these things could not affect the townships, and therefore the fears entertained by the petitioners were groundless. There did not, in truth, appear to be any reason why this objection should be raised, except for the purpose of swelling the petition against those clauses which gave the corporation a permissive power to purchase the undertaking of the gas company. He now came to the real burden of the song, to which all the other notes of complaint were but prefatory. The only petitioners were those who were interested in the minerals, viz.—the trustees of the Duke of Bridgewater, the Kirkless Hall Coal Company and the Cannel Coal Company. They complained that the promoters intended to take power to lay down gas-pipes along and under the roads and highways extending for many miles through the townships. This was perfectly true; the company did not propose to go through any private property, but to carry their mains beneath the surface of the highways. The petition stated "that, within and under such highways, roads, &c., as well as within other lands and portions of the said townships, especially the township of Ince-within-Mackerfield, there are numerous and valuable seams of coal and mineral, some of which are now being worked and got. That some of your petitioners are owners, and others occupiers and workers of such valuable seams of coal and mineral, and your petitioners may be seriously injured and prejudiced in the working of such seams of coal, cannel, and mineral, if the said bill be passed into law, unless provision be inserted therein for facilitating the working and getting thereof, and protecting your petitioners from being responsible for any damage or injury to the said gas-pipes thereby. That the works proposed to be authorized by the said bill are not necessary." In answer to this part of the petition, he would say that the company's mains would be laid along the highways at a depth not exceeding three feet; and, as the petitioners could not work their mines so as to interfere with the highways, neither they nor the gas company needed any other protection than that already afforded to them by law. At the present moment, if the petitioners worked so near the highway as would injure pipes laid in it, they would necessarily cause a subsidence, for which they were already responsible. They could not, therefore, by possibility injure the company's pipes without working so near the highway as to make themselves amenable to the law as it stood; and no additional protection was needed for the public or for the gas company. If the promoters were going to enter upon private property, he admitted that the case would be very different. The landowner might say, "You are here for the first time, and are bound to act in such a manner as not to inflict any injury upon me." But the company did not prevent the petitioners taking one ounce more or less of cannel or coal than they were already prevented doing by the existing law; and, therefore, there was no plea whatever for asking that the bill might be amended in this respect. He had searched as far as he could, and he was not aware of any precedent at all for such a request. This was a measure of great public utility, and it was somewhat strange that the petitioners should ask for facilities to be given them by Parliament for injuring the pipes of the gas company without incurring any responsibility in doing so. In point of fact, it would be contrary to law, as it existed; and, if parliamentary sanction were given to their request, there would be an end of the present measure, for the mains of the company might be destroyed, and their operations brought to an entire standstill. He felt sure the committee would say there was no ground whatever for such an application.

R. Darlington, Esq., examined by Mr. WEBSTER.

I am an attorney at Wigan, and solicitor to the companies mentioned in this bill. The Wigan Gas company was incorporated by Act of Parliament, 3rd, George 4th; and the statements in the preamble of this bill respecting the capital and shares of the company are correct. By the company's Act of incorporation, their operations are limited to the borough of Wigan. There is a considerable outlying district, and fifteen populous townships included in the Wigan Union. They have all separate parish officers, and manage their own affairs, except as regards the poor law. The works at Wigan are conveniently situated for the supply of the whole, Wigan being the lowest point, and the ground rising from thence in every direction. I am acquainted with the general feeling of the inhabitants, which is in favour of their being supplied by this company. During the last ten years, we have had applications almost every month from the out-townships to be supplied. I believe it would be advantageous to the public if we had power so to do. We have been supplying several of them. We supply Ince-within-Mackerfield, and Haigh. We have had an application by Earl Crawford on behalf of Aspull, which is an adjoining township. We are not supplying Hindley, there being a local gas-work there. We supply the townships of Pemberton and Orrell. We are not supplying Upholland, but we have had an application to do so. At present, they have a small local company, which is supplying gas to the inhabitants at 8s. per 1000 cubic feet. The inhabitants are anxious that we should purchase up that company, and supply them with gas from Wigan. We are supplying the parish and township of Standish-with-Langtree. We undertook the supply of that township, after much hesitation, at the request of the inhabitants, who had called a special meeting for the purpose. We charge them 6s. per 1000 cubic feet, less 10 per cent. The quantity of gas that we supplied in 1860 was 46,417,300 cubic feet. Of the several townships mentioned in clause 4 of this bill, we are supplying seven; and that has been done in all instances at the request, or with the approval, of the inhabitants. We have also had the approval of the surveyors of the highways in the townships. The gas company fought against those applications for years. There has been no complaint from those places of the way in which we carry on the business. We have had applications from other places; but we have found that the extent of our mains and works was quite insufficient for the supply. Our works require extension to meet the demands made upon us; I should say they ought to be doubled; but we have no capital adequate for that purpose. Since the recent decisions of the law courts about the power of local authorities to grant permission to lay down pipes, we have considered it necessary to apply for parliamentary powers. We were under the impression that, by getting the authority of the surveyors, we could lay down pipes under the highways, but, after the decisions referred to, we became aware that it was necessary to get parliamentary sanction. Hitherto, we have not only obtained the consent of the surveyors, but, in almost all cases, we have asked the consent of the inhabitants of the various townships. In the township of Ince, which we supply, there are very large works, indeed, and we believe that any person might interfere with our supply, by which several thousands of workpeople would be thrown out of employ, and we should have no remedy. This bill merely confirms what we believed we were rightly doing under the previous state of the law. The population of Wigan proper is 37,653. The population of the townships, comprised within the limits of this bill, is 51,321. The area of Wigan is 2187 acres, and of the out-townships, 30,540 acres. Of the 46,417,300 feet of gas supplied last year by us, 41,333,600 feet were supplied to the borough, 1,441,000 to Aspull, 951,000 to Pemberton and Orrell, and 2,656,500 feet to Ince-within-Mackerfield. Only about one-fourth of a year Standish has been supplied, during which time the consumption has been 25,200 feet. There is a gas-fitting company at Wigan, which it is intended to incorporate with the gas company in this bill. The district supplied with gas has more than doubled during the last 10 years.

Serjeant WRANGHAM: We do not at all object, on the part of the petitioners, to any increase in the capital of the company.

Examination continued: We are charging 4s. 2d. per 1000 feet in the borough, to small consumers, and 3s. 9d. to large ones; 4s. 2d. is our maximum, less 10 per cent. if the account is paid within one month. We have no parliamentary maximum. At Standish, we charge 6s. per 1000, less 10 per cent. It cost us £430 to lay the mains in the township. It is consistent with practice that the out-townships should pay more than the denser parts of the borough, as there is a greater cost in laying down mains, the returns of the company are less, and the leakage of gas considerable. We shall have to take up a number of our mains in the borough, and lay down larger ones, in order to supply the districts beyond. We have had applications from Pemberton for a supply of gas, and have agreed to purchase the company existing there, and to supply the township. We increased our mains, for the purpose of supplying them; we took up the 2 and 3-inch mains to the boundary of Pemberton, and put down 6-inch mains. I have looked at the petition presented against this bill; the petitioners are almost all of them interested in coal.

Cross-examined by Serjeant WRANGHAM: There are some portions of the parishes of Ince and Pemberton which are nearer to our works than parts of the borough. Some portions of Aspull also are nearer. We supply the township of Ince at the same rate as we supply the borough of Wigan, because we only supply that portion which lies against our works. We supply the Pemberton company with gas at 3s. 9d. per 1000, less 10 per cent.; and they supply the inhabitants, charging those next the borough 4s. 6d.; half way in the township, 5s.; and, to the village of Pemberton and beyond, which is about a mile and a half from Wigan, they charge 6s. 6d. per 1000. They have no works—only mains. At Haigh and Aspull, we charge the same rate as in Wigan, but we only supply a few yards in each township. We are going to supply the whole, but there is no arrangement between us and the townships as to what the price shall be. When the bill was introduced, there was no distinctive charge in it; we took a maximum charge of 5s. 6d. over the whole area. Our present rates of 4s. 2d. and 3s. 9d. per 1000 have only been charged for a short time. When we commenced, in 1822, we charged 15s. and 12s. 6d. per 1000. From 1846 to 1850, we charged 5s. 6d. and 5s.; from 1854 to 1857, 4s. 1½d. and 3s. 9d.; from 1857 to 1860, 4s. and 3s. 9d.; and in the latter year we got down to our present prices, 3s. 9d. and 3s. 4½d. net. We supply very large works in Ince, which employ many thousands of hands. The dividend which the gas company paid from 1855 to 1857 was 10 per cent. In 1857, we also declared a bonus of £1 per share upon our additional capital, as we made some fortunate cannel contracts. In 1858, we declared a 10 per cent. dividend, with a 10 per cent. bonus upon our share capital. In 1859, it was the same. In 1860, we paid 25 per cent. upon our parliamentary capital. We have increased our capital by money expended out of profits. In 1855 and 1856, we made about £10,000 out of cannel, as we had a contract with Lord Crawford for 10s. per ton, and cannel rose to 30s. We have laid out £12,500 upon the works out of profits. That has been mostly laid out during the last seven years. There is a separate company supplying Hindley, and we are not to light within a mile of that company's works, except by agreement. We take powers to go and supply Hindley, if we agree with the company, and no doubt we shall do so. The gas-fitting company was established in 1855. It is a joint-stock company, not limited. The shareholders in that company are, generally speaking, shareholders in the gas company. There are, perhaps, 100 shareholders out of the 1200 who are not the same. Substantially, they are the same body of shareholders. The gas company supplied gas-fittings before that; but, at the time we established the fitting company, small shopkeepers were applying to us for gas, many of whom had not the means of paying for their meters, and the object of this company was to purchase meters, and supply them to the small cottagers on hire. The gas company only supplied meters partially, and to a small extent, previously. The real truth is, we had not capital nor power, under our Act, to become fitters.

Serjeant WRANGHAM: It was a mode of getting additional capital without coming to Parliament.

Witness: We thought it was the best way.

The CHAIRMAN: Do you object to the incorporation of the meter company?

Serjeant WRANGHAM: The committee will see by-and-bye what my object is.

Cross-examination continued: We were not gas-fitters under the special Act, and we had no capital applicable for the purpose, nor any power for increasing it. The dividends of the fitting company have varied from 10 to 15 per cent. upon the paid-up capital. It has been a very profitable company. The whole of this district is not cannel; it is all coal. Cannel is a peculiarly Wigan article; the best cannel is under the parish church, and it goes through a great part of the district; but cannel is only one of the many seams of coal. There is a hundred times as much coal got as cannel. Cannel is used principally in the manufacture of gas.

By Mr. WEBSTER: Almost the whole town is undermined for coal.

By Serjeant WRANGHAM: I am acquainted with the mode in which the mines are worked. They are worked under the highway, and the coal-owners are liable to make good any damage from subsidence, and they do so to some extent.

Re-examined by Mr. WEBSTER: We had no power under our active incorporation to become gas-fitters. That Act was a very meagre one. The practice of modern times has been for gas companies to supply meters, and take a rent for them. We became fitters from necessity, and the fitting company was a great public convenience. For several years, the gas company paid no dividend. The question of capital has been gone through by Lord Redesdale, and the rate of dividend to be received, has been adjusted by special clauses. The Gas-Work Clauses Act is incorporated in this bill, but we are only allowed 7½ per cent. The opposition on the part of the inhabitants of Ince is purely a mining opposition. In several instances during the last twenty years, our mains have been damaged by the working of coal under the highways, and we have made claims upon the lessees of the mines, but have never yet got anything from them. The mine-owners are now seeking that, in case our pipes are damaged, they shall not be liable. We think it is very hard that our pipes should be damaged, and we should have no redress. The part of Ince that we supply is very populous, and we charge the same rate there as in Wigan, and we intend to do so. Hitherto, we have charged whatever price we liked. By this bill the price of gas is regulated, and the 10 per cent. reduction which we have hitherto allowed is made compulsory. No objection has been taken to the arrangement we made with the Pemberton Company to supply them with gas, and for them to distribute it. I am quite satisfied with the general law as to the mines. We have never obtained compensation from the coal-owners, and we do not want them to have any special legislation against us.

N. Eckersley, Esq., examined by Mr. PICKERING.

I am a banker and cotton-spinner at Wigan, and chairman of the company. I reside at Pemberton, and own a mill there. I have also large works in Wigan, and property in the township of Hindley. I and my tenants are large consumers of gas. The company require increased capital for the purpose of meeting the demand made upon them, for the part of Pemberton where I reside is not at present supplied with gas, but the inhabitants are anxious to obtain it, and would be large consumers. The corporation of Wigan have spent large sums of money in water and sewerage. There is no public supply of water in the out-townships, and no sewerage, that I know of. I believe that our company can supply the out-townships better than they can be supplied in any other way; and, speaking generally on behalf of the inhabitants, I should say they are very willing to take gas from us. I consider that the difference in the rate proposed to be charged by this bill is reasonable in principle.

Cross-examined by Serjeant WRANGHAM: The population of Ince is 8267, and Pemberton nearly 7000.

The CHAIRMAN said he thought the points of difference between the parties were very immaterial.

Serjeant WRANGHAM said he was quite willing to come to an agreement with the promoters, if they would take powers of lighting outside the borough by agreement with the surveyors of the highways, limiting the price of gas in the same way as in the borough, and not adding to the responsibility of the parties whom he represented in respect to their pipes.

Mr. PICKERING said the power of lighting, which the company would possess, was only by agreement. They would not lay pipes anywhere unless called upon to supply gas.

The CHAIRMAN: Of course, they would not lay pipes without the parties in the neighbourhood wished to be supplied.

Serjeant WRANGHAM: Clearly not; but we think that, if we are to come within their jurisdiction, we should have the same advantages. We are much nearer to the gas-works than the larger part of the district within the borough, and we think we should be treated in the same way. The proof that we are entitled to it is, that they are actually charging the same prices now.

Mr. PICKERING: You should have sufficient confidence in us to believe that we shall do right. I will just call the surveyor to show how the pipes lay.

Mr. *Hunter*, examined by Mr. PICKERING.

I am the borough surveyor of Wigan. I reside at Standish, and am churchwarden. The churchwarden and overseers called a public meeting of the inhabitants in August last with respect to the supply of gas; and a committee was appointed, of which I was one, to confer with the company. They are now supplying us with gas at 6s. per 1000; and that is done to the satisfaction of the inhabitants.

Mr. PICKERING: It is proposed to lay the pipes under the roads. At what distance would that be from the surface; would it be more than 3 feet?

Witness: I think about 3 feet, more or less.

Mr. PICKERING: In your judgment, would any injury be done to the pipes by working the mineral, without causing a subsidence in the highway?

Witness: Certainly not.

Examination continued: With regard to the corporation clause, I believe the feeling in Wigan is, that it might be advantageous to put a permissive power in this bill for the corporation to purchase these works. I know that in other places this power has been most satisfactorily exercised. Any profits made by the works go in reduction of the rates. It is also advantageous, as far as the public is concerned, that the management of the works should be in the hands of those who have the control of the streets; and, that the supply of water and gas, should be administered by those who have the charge of the rates. The supply of water in Wigan is in the hands of the corporation, who have expended £140,000 upon those works and the sewerage.

Cross-examined by Serjeant WRANGHAM: The meeting on Saturday last was a meeting of the ratepayers of the borough only.

Mr. *J. Hilton*, examined by Mr. PICKERING.

I am the town-clerk of Wigan. In compliance with the order of the House of Commons, a meeting of the ratepayers of the borough was held on Saturday to consider the additional powers proposed to be inserted in this bill. The feeling was unanimously in favour of them.

Cross-examined by Serjeant WRANGHAM: We supply the borough with water. Our works are not yet complete. We purchased the works of the old company, and supply from them at present. We have not made any profits, taking into account the expenditure upon the new works. I understand that in the city of Manchester the corporation make a large profit from the supply of gas. I am not aware whether that profit is applied to making good the deficiency arising from the supply of water.

J. Taylor, Esq., examined by Mr. PICKERING.

I am the mayor of Wigan. The feeling in the borough is unanimously in favour of the works being in the hands of the corporation. It is also the feeling of the townships; and my own opinion is, that it is advisable.

Serjeant WRANGHAM: Have not the town council plenty of work on hand with their municipal duties and the supply of water to the inhabitants?

Witness: They have plenty to do.

Serjeant WRANGHAM: Are the finances of the corporation in a flourishing condition?

Witness: We have been laying out a large sum of money lately.

Serjeant WRANGHAM: The interest on which has to be paid out of the rates?

Witness: It has.

Serjeant WRANGHAM: Is there any peculiar fitness in a town council for the management of gas-works?

Witness: I cannot tell what there may be. They change every three years.

Serjeant WRANGHAM: Is there a constant succession of good and learned gas men in Wigan to take the place of their predecessors?

Witness: I cannot say that there is.

This was the case for the promoters.

Serjeant WRANGHAM then addressed the committee for the petitioners. He said the committee had heard incidentally what was the nature of his case. For the purpose of this inquiry, he might be taken to represent the inhabitants and proprietors of lands, minerals, houses, and mills in the out-townships—*i. e.*, beyond the boundary of Wigan, although the property of many of the petitioners was considerably nearer to the gas-works than many parts of the borough itself. The petitioners submitted to the committee, first of all, that they ought to be left out of the jurisdiction which was to be conferred on the gas company under this bill, the more especially so as it was intended to include a power of transfer of the gas-works to the corporation of Wigan. They did not object that the company might take powers, by agreement with the vestry of each township, to supply gas, nor that they should have permission to lay down their pipes under the public highways of the townships, so conceded to them by agreement with the vestries. That was the system at work now, and which appeared to work to the satisfaction of all concerned. They did not object to their increasing their resources, nor to their extending their mains to a greater distance from the works than they had hitherto done. But, these things being conceded, he thought there was no ground why the company should take power to charge the townships 5s. 6d. per 1000 for gas, when they limited their price within the borough of Wigan to 4s. 2d. There were two objections to the course which they proposed to take. First of all, the limits of the borough were not the proper line of demarcation where, if there were to be a distinctive price, that distinctive price should commence. If distance from the gas-works—which was the justification alleged by the promoters for the larger price in the case of the out-townships—was to be taken as the test, it would be much better to take a real than a fanciful boundary, particularly as four-fifths of the borough of Wigan was no more town than were the townships which lay adjacent to the borough. Whatever, therefore, could be urged in favour of the lower price in Wigan, applied with at least equal force to many parts of the places which he represented, and in which the return to the company, for any given length of main, would be as great as in the borough itself. The second consideration on this point, which he would offer to the committee was, that the price the company had fixed as the maximum within the borough was quite large enough for even the most distant parts of the out-townships, and was as much as, judging from their antecedents, the company ought to have. For several years past, they had been charging, without distinction as to the place of supply, at the rate of 4s. 2d. and 3s. 9d. per 1000 feet, with a discount of 10 per cent.

Mr. PICKERING said the price in Standish was 6s. per 1000.

Serjeant WRANGHAM said Standish was the most distant part of their district; and, therefore, in that case, they had adopted the principle for which he contended. He was about to draw the attention of the committee to the fact that, for several years past, they had been charging their present rates, and yet, during those years, they had been paying to their shareholders a dividend of 20 per cent. upon their parliamentary capital; and, in the last year, as much as 25 per cent. It also appeared that, during that same period, they had spent £10,000, which a lucky speculation in cannel put into their hands, and had improved their property to that extent. This was tolerable evidence that the company were not otherwise than in a very flourishing state. Looking at the ancillary company—the gas-fitting company, which was formed a few years ago by the shareholders in the original company, it appeared as if they, too, were not in a very poor condition. It was said that that company was formed for public convenience; he could not but think private convenience had something to do with it, and that the profits upon the joint operations of gas-making and gas-fitting by the first company were becoming so large, that the proprietors felt it would not look well for them to be receiving 30 or 40 per cent. upon their original capital. They, therefore, formed a subsidiary company, so that the profits of the two branches of the undertaking might be separated, and appear to range within reasonable limits. If this were so, and these two prosperous companies were to be reunited, and to carry on their operations upon a still larger scale, what reason could there be for imposing upon any part of the district, a higher rate of charge than that which they had evidently found to be so remunerative? The promoters had given no evidence by which the judgment of the committee could be guided as to what the maximum price should be; nor had they offered any proof of what the cost of production was. Wigan, as the committee knew, was the place where gas ought to be the cheapest in the world. The cannel from which gas was made was found actually under the town itself, and the company had, therefore, no expenses to incur in transit of material—an expense which was an important item with every other company. As his learned friend had left his case so bare, it must be clear that those who instructed him had very good reason for keeping the committee in the dark upon the subject; and he (Serjeant Wrangham) had a right to assume that, had the facts been known, the promoters would have found it impossible to support their claim for so high a maximum as that inserted in the bill. The next objection which he had to submit was in reference to the transfer of the works to the corporation. It was not for him to argue at any length the question of whether, under certain circumstances, it might be advisable that the municipal body should

have the supply of water or gas within the bounds of their own municipality; but he might say this, that it became a very different question when, instead of limiting their jurisdiction to the borough over which they presided, they came to ask at the hands of the Legislature indirectly the grant of powers for the purpose of dealing in gas and gas-fittings over an area which was fifteen times as large as the large and mainly rural district within the limits of the borough of Wigan. This application involved points which he did not recollect to have seen any legislation upon, either in this or any previous session of Parliament. He was aware of the fact that there were cases in which municipal corporations supplied water, and there might be two or three in which they supplied gas, within their jurisdiction; but he knew of none, nor had his learned friend supplied any precedent, where the municipal corporation had taken powers to supply not only the borough but the out-townships in the same union, but over which they possessed no municipal control whatever, and which were of much larger area than that which they did possess. It was true his learned friend had informed the committee that the feeling in Wigan was unanimously in favour of these provisions of the bill, and the town-clerk and mayor were called to prove that unanimity, and to give the committee the expression of their opinion as to its desirableness. But it seemed to him that very great inconvenience would result from creating a precedent for this step. The corporation owed its jurisdiction to the votes of the ratepayers of the borough; and, of course, they were bound to consult and did consult for the sake of their places in the council, the wishes and desires of their constituents. Supposing this bill passed, and under its provisions the corporation of Wigan took possession of the supply of gas, and of gas-fittings, they would be entitled to make 10 per cent. profit out of the undertaking. What would become of that 10 per cent.? That 10 per cent. would be made out of the supply to consumers extra-mural, as well as intramural; in fact, if the distinctive prices in the bill were sanctioned, the extra-mural consumers would contribute in a greater ratio to make up that 10 per cent. than the consumers within the borough. It was obvious the 10 per cent. so made, would become part of the borough fund, and must, under the Municipal Reform Act, be applied to certain definite purposes within the borough. Was it reasonable, or fair, that the out-townships should be subject to a distinctive maximum price which might be kept up to its full extent, while the price to the constituents of the borough council might be reduced to any conceivable point they pleased? It appeared to him that this was a conclusive argument against placing in the hands of the corporation the power to tax in any way those who were not under their jurisdiction, and who had no means, by withholding their votes at the town elections, of making their grievances felt by those who inflicted them upon them. He now came to that which his learned friend seemed to think was the essence of the petition against the bill—viz, the protection of the owners and occupiers of the cannel, and coal-mines against being liable for damage to the gas-pipes. And here again, he would say the petitioners did not desire to be within the limits of the jurisdiction of the company, or of the corporation; they were not volunteers in the matter; they would prefer being left out altogether from the four corners of the bill. The promoters came to them, and insisted upon laying down their pipes along the highways traversing the whole of the townships, something like 70 or 80 miles. There was coal under every one of them; there were 70 or 80 miles of coal of the width of the highway, in the several townships mentioned in the bill. At present, the mine-owners worked under the highways, without stint or limit, subject to the liability, not always enforced of making good any damage arising from subsidence of the roads through their excavations. But the promoters were coming to add to their responsibility by laying gas-pipes along the road. If the road sank, so would the gas-pipes; and the mine-owners would have the additional liability of making good the damage done to them. It certainly did not appear that this was fair. The promoters were a trading company, seeking only their own interests. They asked for power to carry their pipes over the minerals of the petitioners without their consent, and called upon them to work their minerals so as not to expose those pipes to damage. All the petitioners desired in such case was, that what the Legislature had seen fit to do in the Water-Works and Railway Clauses Act should be done here. It was true there was no such provision in the Gas Clauses Act, and for this simple reason, that gas-works had almost always reference to towns and populated places in which the working of minerals did not take place. That provision was found to be an ample protection for all parties, and it was in effect this, that the proprietor of a mine should be bound to leave a certain breadth of coal or mineral untouched under any line of railway or water-main, and when, in the ordinary course of his working, he came to the excepted spot, and desired to win the coal or mineral under the line or main, he gave a certain notice to the railway or water company, who had the right to elect between purchasing the same, or of allowing the proprietors to work it out at their risk. He ventured to submit that it was only right some such enactment should be made in this case, so that the petitioners might be protected from a serious liability, on account of other parties prosecuting an undertaking for their own exclusive benefit. He left these three points with the committee for consideration, trusting that they would not pass the preamble of the bill without intimating that the petitioners ought to have protection with respect to the price at which gas should be supplied to them, the liability they would incur by the laying of the company's mains along the highways, and also against being brought under the jurisdiction of the corporation whenever a transfer of the company's works was made to them.

The room was then cleared. On the parties being called in,

The CHAIRMAN said: The committee have determined that the preamble is proved. With reference to the points raised by the learned serjeant, the committee think it would be reasonable that, within a radius of one mile from the gas-works, the maximum charge for gas in the townships should not exceed the maximum in the borough of Wigan. With regard to the transfer to the corporation, they approve of that. There is one other point, viz., the working of the coal under the highways without damage to the gas-pipes; the committee do not think it necessary to introduce any clause in reference to that.

Mr. LOCH said he understood the committee to give a permissive power for the transfer of the works to the corporation. There was only one proposition he had to make—viz., that, in the event of such transfer, whenever any reduction in the price of gas was made by them in the borough, there should be a *pro ratâ* reduction in the townships, and any profits made by the gas-works should be applied to a reduction of the rates in the entire district, and not in the borough only.

Mr. PICKERING objected to the proposal, which, he said, would oblige them to fight the question over again.

The CHAIRMAN: If the corporation purchase, the profits will go to the corporation funds.

The clauses were then gone through and agreed upon, with the alteration of the rate within the mile radius according to the decision of the committee.

Legal Intelligence.

ROLLS COURT.

(*Before the* MASTER *of the* ROLLS.)

SATURDAY, JUNE 22.

COATES *v.* NOTTINGHAM WATER-WORKS COMPANY.

His honour delivered judgment in this case this morning. It was argued last term; and, as the question to be decided fully appears in the judgment, a detail of the facts is unnecessary. Mr. FOLLETT and Mr. HAMILTON HUMPHREYS appeared for the original shareholders; Mr. PALMER and Mr. LEONARD FIELD for the consumers, who were not parties to the bill, but who claimed that the surplus should be applied in reducing the price of the water; Mr. LLOYD and Mr. OSBORNE for the new shareholders; and Mr. T. BACON for the directors.

The MASTER of the ROLLS: The question I have to decide is whether, upon the construction of two Acts of Parliament, the shareholders in the Nottingham Water-Works Company, prior to 1854 are entitled, out of the existing surplus profits of the company, to be paid what would be necessary to make up the per cent. per annum upon the dividends received on their shares since 1845, upon the nominal amount of the original shares? The first Act, now in course, was passed on the 30th of June 1845. It created a capital of £75,000 in 3000 shares of £25 each. I do not think it necessary to go into any detail as to the effect of the clauses; but, by the 30th section, the amount of dividends was limited in this way:—"No dividend shall be paid exceeding the rate of 10 per cent. per annum on each of the shares given in lieu of the shares of the company, incorporated by the Acts hereby repealed, and not exceeding the rate of 10 per cent. per annum upon the amount received, as calls, or stock represented by the new or additional shares created by virtue of this Act, unless a larger dividend shall at any time be necessary to make up the deficiency of the previous dividends, when such previous dividends shall have fallen short of 10 per cent. per annum upon each of such shares given in lieu of said existing shares, and 10 per cent. per annum on stock subscribed under the authority of this Act, paid up for the purpose of the said undertaking." The 32nd section is an important one; and I will refer to that presently. It merely provides for the manner in which the price of water is to be reduced, and under what circumstances. Under this Act, the company was carried on, and annual dividends were paid; but never amounting to 10 per cent. on the nominal amount of the shares. The second Act was passed on the 12th of May, 1854. It is the 17th Vict., cap. 10. At this time, a deficiency to a considerable amount below the 10 per cent. per annum existed in the dividends already paid; and which, if that second Act had not passed, and the company had been sufficiently prosperous, the shareholders would have been entitled to receive. The question is, whether the second Act of Parliament has deprived the original shareholders of this right? The second Act was passed for the purpose of altering, amending, and enlarging the former Act. It repeals no one of its clauses; it is simply additional, and it makes the nominal capital of the company £250,000, by making it consist of 5000 shares of £50 each, in exchange for the £25 shares created by the former Act, and it created 2000 additional shares of £50 each, and limited the dividend on such shares to 5 per cent.; thus enabling the shareholders of £25 shares to receive their original maximum dividend, and a dividend of 5 per cent. upon the £50 shares. The parts of the new Act which seem to me to have any bearing on the subject are the following:—First, there is the preamble, which recites the previous Act, and it recites that, "Whereas the shareholders in the company are entitled to dividends upon the nominal amount of such shares after a rate not exceeding 10 per cent. per annum, it is expedient to make further regulations," and so on. The 4th and 5th sections are the others, which it is all I think it necessary to refer to. Now, the 4th section is in these words:—"From and and after the passing of this Act, the rate of dividend payable by the company shall not exceed the sum of £2. 10s. per annum in respect of each of such shares, unless a larger dividend be at any time necessary to make up the deficiency of any previous dividends." Now, upon this section I am of opinion that no distinction is made between one class of shares and the other, or between one species of dividend and another. The words are "any previous dividend." I do not consider myself to be at liberty to cut down this, which is a most general expression, to any previous dividend declared under the authority of this Act, or subsequently to the passing of this Act. I am at a loss to understand why the recital I have read was introduced, unless it was intended to deal with those dividends which are thereby expressed to be the right of the existing shareholders; and I think the clause deals with that subject by putting all the dividends—both those before the passing of the Act, and those subsequently—on the same footing. But I also think that, if there was any doubt upon this subject, it is removed by the following section, which is the 5th, and which is in these words:—"Every person who, at the time of the passing of this Act, shall be the proprietor of one or more shares in the capital of the thirdly-recited Act authorized, shall be entitled for each such share to a share of the capital by this Act authorized; and the last-mentioned share shall, from the passing of this Act, be vested with all the rights acquired by the thirdly-recited Act in respect of the same, so far as such rights are not inconsistent with the provisions of this Act, in such person accordingly." Now, what are the rights here spoken of which are to be preserved to the shareholders under the first Act? They are the rights acquired under that Act, and the preamble recites that under that Act they would be entitled to a dividend of 10 per cent. upon the nominal amount of their shares. This, therefore, was one of the rights acquired under that Act, and this was one of the rights vested in the old shareholders in taking new shares under the Act. And, indeed, except the clause referred to such dividends, it is difficult to see what the rights are which are vested in them, and why such right to be paid the deficiency of former dividends should be excluded. Are they inconsistent with the provisions of the latter Act? It is clear they are not. It seems to me they are not only consistent with it, but that any other construction would be inconsistent with the provisions of the two Acts, which must, for this purpose, be read together. That this is so, is, to my mind, made clear by the contention, on the part of the consumers, upon the clauses upon which their rights depend. The contention, on the part of the consumers, is, that the deficiency of dividends under the former Act is gone, and that only the deficiency upon dividends declared since the passing of the second Act can be made good out of the surplus profits of the company; that this excess of profit, after these deficiencies, should be made good, or to be applied in reducing the price of water to the consumers; but, under the second Act, taken alone, there is no power to reduce the price of water to the consumers. It is solely under the first Act, which is incorporated with this Act, and enlarged and amended by it, that this power can be exercised; and the only clause in the former Act under which this reduction of price to the consumers can be effected, is the 32nd clause, which I have referred to already, and which is to this effect:—"When, and so soon as such fund shall, by accumulation or otherwise, amount to the sum of £7500, and dividends to the amount hereinbefore

limited shall have been paid on account of the contingent-fund, and of the receipts, expenditure, and profits of the company, shall be laid before the Court of Quarter Sessions for the town of Nottingham, and be left with the clerk of the peace of the town and county; and, if it shall thereupon appear to such court that the profits of the company for the preceding year shall have exceeded the sum hereinbefore authorized to be divided among the several proprietors of shares in the undertaking, the company shall make a rateable reduction of the rents and prices of water, to be furnished by the company for the then current year, as in the judgment of the said court shall be proper, until, by the expenditure and payments of the company, the contingent-fund shall have been reduced below the said sum of £7500, when the price of water may, if necessary, be again raised; and so, from time to time, as such event shall happen." So that the effect of this clause is, that the reduction of price to the consumers is only to take place after the accumulation-fund, if created, shall amount to £7500, and after dividends, to the amount of 10 per cent., shall have been paid upon the original shares. That is, the Court of Quarter Sessions, which alone has authority to reduce the price, has no power or jurisdiction to reduce the price of the water until 10 per cent. dividend has been paid upon the original shares. The nominal value of these shares is doubled by the second Act, and a dividend of 5 per cent. is substituted for 10 per cent. upon the former half of the amount; but this obviously is the same. Then, power is given by the 4th section of the second Act to pay the deficiency of any previous dividends. I consider it, therefore, clear that not only the directors are authorized to pay the deficiency of previous dividends from the beginning, in 1845, but, further, that the Court of Quarter Sessions has no power to reduce the price of water to consumers until every previous deficiency in the dividend is paid. I will, therefore, make a declaration to this effect; but I will vary the expressions of the declaration, if it shall appear to counsel, when they have considered it, to be inadequate to express the construction which I have put on this clause, and which I have stated:—"Declare that the surplus of the past income of the said Nottingham Water-Works not yet expended, and of the future income of the said company, as the same shall be raised, after payment of the working expenses of the undertaking, and the interest on the amount of the money unpaid by the company under the authority of the aforesaid Acts of Parliament, after providing such an amount for the contingent-fund as the directors, under the authority of the same Acts, may consider necessary to set apart for that purpose, is applicable to the payment of arrears of dividends to the shareholders in the said company in the following manner: that is to say, in or towards payment of what is necessary to make up the deficiency of any previous dividend declared subsequently to the passing of the Nottingham Water-Works Act of 1845; and, if such surplus shall be insufficient to pay such deficiency in full, then that the same is to be applied, *pro ratâ*, in the payment of so much deficiency as the said surplus will extend to satisfy each of the shareholders of the said company; and so on in each and every year, as long as such surplus shall exist, until the whole of the deficiency of any previous dividend shall have been made good, and paid to the shareholders of the company." This, probably, is all that will be required; and it will be unnecessary to take any account, as prejudged by the bill. The costs of the plaintiff and defendants, the directors, must be paid out of the funds of the water-works company.

Mr. OSBORNE: Your honour will think the shareholders whom I represent, who are shareholders other than the old shareholders, namely, the shareholders under the new Act, should have their costs.

The MASTER of the ROLLS: They fail in their contention.

Mr. OSBORNE: It was for the purpose of deciding the question.

Mr. FOLLETT: We do not object to that. Probably, your honour would think it should be prefaced by a declaration that they are entitled to the 10 per cent.; otherwise it would not perhaps meet the whole of the case.

The MASTER of the ROLLS: A declaration of 10 per cent. up to the passing of Water-Works Act, 1854, and 5 per cent., after the passing of that Act.

Mr. OSBORNE: I understand your honour to direct the deficiency under the second Act to be paid in the first instance?

The MASTER of the ROLLS: Just the contrary. The great object of my judgment was to express that I made no distinction between them. Probably this will meet your view, Mr. Follett. After stating how the dividends are to be paid, go on to say, in calculating any deficiency of dividend up to the time of the passing of the Act of May, 1854, they are to be calculated at 10 per cent., and, subsequently to the passing of that Act, at 5 per cent. upon the nominal amount of the shares of the company; but, in respect of such deficiency, all shares—those created by the Act of 1845, or the Act of 1854—are to be treated as standing on an equal footing.

Mr. FOLLETT: I think that will do.

COURT OF QUEEN'S BENCH.

WEDNESDAY, MAY 29.

(*Sittings in Banco, before Lord Chief Justice* COCKBURN, *and Justices* WIGHTMAN, CROMPTON, *and* BLACKBURN.)

THE SOUTH STAFFORDSHIRE WATER-WORKS COMPANY, *Appellants;*
v. THE CHURCHWARDENS AND OVERSEERS OF THE PARISH OF DARLASTON, *Respondents.*

Mr. MATTHEWS appeared for the appellants, and Mr. MANISTY for the respondents.

Mr. MATTHEWS said this was a special case, stated for the opinion of the court upon an appeal against a rate made for the relief of the poor of the parish of Darlaston, in the county of Stafford. The rate was made on the 20th day of August, 1859, and the appellants were assessed on a gross estimated rental of £1330, the net rateable value being £1000. The appellants were an incorporated company, acting under the provisions of two Acts of Parliament, passed respectively in the years 1853 and 1857. By the fourth section of the first-mentioned Act, which incorporated the company, the appellants were empowered to supply water within the limits of the city of Lichfield; and that part of the parish of St. Michael, Lichfield, which lay in the county of Stafford; the borough of Walsall, the foreign of Walsall, the parishes of Wednesbury and Darlaston; the townships of Bilston and Willenhall, in the parish of Wolverhampton; the parish of Sedgley, and the several villages or townships in such last-mentioned parish; and the parishes of Tipton, West Bromwich, and Rowley Regis, in the county of Stafford; and the parishes of Dudley and Oldbury, in the county of Worcester; and, by the company's amendment Act, of 1857, the limits were extended to the hamlet of Smethwick, in the county of Stafford. For the purpose of supplying water to the several places within these limits, the appellants were authorized and empowered to make and maintain reservoirs, with proper works and conveniences connected therewith, near to the city of Lichfield; and there to take, divert, intercept, impound, and use, for the purposes of such supply, the waters flowing in certain streams mentioned and described in the said Acts, and the tributaries and off-sets of such streams. The said Acts also authorized the making and maintaining of reservoirs, with all proper works and conveniences connected therewith, in several parishes, townships, or extra-parochial places named in the said Acts; and also aqueducts, or main-pipes, with all proper works and conveniences between each of the said reservoirs, so as to connect the same, and provide for the flow of the water from one to the other, and an aqueduct or main-pipe from the reservoir in the parish of Tipton, to, and terminating at a point in, the road leading from Birmingham through West Bromwich to Dudley, and another aqueduct, or main-pipe, from a reservoir at Lichfield to a pit-shaft at or near a place called Sandfields, in the parish of St. Michael, Lichfield. The appellants had not yet made and completed the whole of the reservoirs and aqueducts, or main-pipes, and the works and conveniences so authorized to be made and maintained, but were proceeding to do so with all reasonable speed within the time allowed for that purpose, at the time of the making and publication of the rate. The appellants had made and completed at Lichfield, two large reservoirs, pumping-engines, and machinery of great power, and a pumping-shaft. These reservoirs were connected with the pumping-engines and machinery by an aqueduct or underground tunnel of considerable length; and, by these means, the water required and used for the supply of the places within the limits of their Acts, was collected and stored and conveyed to the bottom of the pumping-shaft for the purpose of being lifted and forced by the pumping-engines through the district supplied by the company. They had also made and completed a large reservoir at Walsall, and a smaller one at Wednesbury; and between the reservoir at Walsall and the pumping-engines and machinery at Lichfield, a distance of eleven miles, an aqueduct, or main-pipe, of partly 24 and partly 22 inches in diameter was laid, and a water-tower and main of 210 feet in height erected. By means of this aqueduct, or main-pipe, and the water-tower and main, and by the action of the pumping-engines and machinery, the water collected at Lichfield was conveyed into the reservoir at Walsall, and also into the district supplied by the appellants, by means of mains and service-pipes, without the water so supplied passing into the Walsall reservoir. There was, also, laid an aqueduct, or main-pipe, of 22 inches in diameter, between the reservoir at Walsall and the reservoir at Wednesbury, a distance of three miles; and this aqueduct or main-pipe was also connected with the aqueduct, or main-pipe, from Lichfield to Walsall. Through these aqueducts or main-pipes, and by the same power, the water was further lifted, forced, and conveyed into the reservoir at Wednesbury, and also into pipes or mains laid down for supplying water to the parishes of Wednesbury and Darlaston, without passing through the reservoirs at Walsall and Wednesbury, such reservoirs containing a reserved supply when needed for many other of the parishes and places within the limits of the company's Acts. The whole of the before-mentioned works, except the mains and surface-pipes laid down in the parish of Darlaston, were without the respondent parish of Darlaston; and, in their construction alone, the appellants had expended the sum of nearly £120,000. From the reservoirs and pumping-shaft at Lichfield, or from the reservoirs at Walsall and Wednesbury, the water was conveyed and supplied to customers for public and private use in some only of the parishes and places mentioned by means of smaller mains and service-pipes; and, amongst others, the respondent parish of Darlaston. The additional works necessary for the supply of water to the other parishes and places within the limits were in course of construction, and not completed; but the works already mentioned, were constructed, and calculated for supplying the whole of the parishes and places within the limits of the company's Acts. The whole length of the mains and service-pipes laid down by the appellants within the respondent parish of Darlaston was 10,603 yards. They were of a diameter varying from two to six inches; and the costs at which they had been laid down was £2746. 14s. 4d. In addition to the above 10,603 yards of mains and service-pipes, there were connected therewith smaller service-pipes, estimated at 3253 yards in length belonging to the consumers. All the company's mains and service-pipes within the parish of Darlaston, were laid under and along the public roads and streets, and occupied a space of about 904 superficial square yards. The appellants had the right or power under their Acts to lay down their mains and service-pipes, under and along the said public roads and streets, but they had no freehold or leasehold interest in the soil, nor were they in the use and occupation of any other land within the said parish. The receipts of the appellants were derived solely from the supply of water to public and private customers, and the before-mentioned reservoirs, tunnel-pumping shaft, pumping-engines, and machinery, aqueducts or main-pipes, and water-tower, were necessary for lifting, forcing, and [conveying such supply of water to the respondent parish, and all the other parishes and places within the limits of their Acts. The appellants commenced the supply of water within the respondent parish on the 15th of March, 1859. Taking into account the whole of the receipts of every kind derived from the supply of water between that time and the 30th of September following, the estimated gross annual income of the appellants, at the time the rate was made, amounted to £3409. 5s. 5d., of which sum £727. 11s. 6d. was the estimated gross annual sum received from the respondent parish; and, taking into account the whole of the disbursements between the same dates for working charges, for the water actually supplied, and for the deductions allowed under the Parochial Assessment Act in respect of their works, which would be used for the supply of water to the whole of the parishes and places within the limits of the company's Acts in common, it might be considered that the estimated annual amount of such disbursements and deductions was nearly, if not quite, equal to the present gross annual income. Supposing the amount of such disbursements to be distributable amongst the several parishes and places from which that income was at present derived, in proportion to the gross receipts in each, it might be considered that no large if any actual profit to the company was derived during the said period, from the respondents parish. The appellants had no works in Darlaston which would be used in common for supplying that and any other parish or place. Taking into account the disbursements which would be actually incurred within the respondent parish, they would be less than the estimated gross annual income of £727. 11s. 6d. received from the parish; but the appellants contended that they were not liable to be rated at all in respect of their mains and service-pipes within the respondent parish, and that, from the estimated gross receipts derived from the respondent parish, they were entitled to have deducted, besides the disbursements actually incurred therein, a proportionate amount of the disbursements in respect of the reservoirs, tunnel, pumping-shaft, pumping-engines, and machinery, and the aqueducts or main-pipes, and water-tower, in the ratio of the present gross receipts derived from the respondent parish to the receipts from the other parishes actually supplied. The respondents contended that the company were rateable in respect of their mains and service-pipes within the respondent parish, and that, in ascertaining the rateable value, the appellants were not entitled to distribute the whole of the disbursements required for the supply of water among the parishes and places at present actually supplied; but only such a proportion thereof as the parishes and places at present supplied bore to the whole of the district to be supplied when the works were completed. The questions for the opinion of the court were:—Firstly. Whether the appellants were liable to be rated for their mains and service-

pipes within the respondent parish? Secondly. If liable to be rated, then upon what principle the rateable value of the said mains and service-pipes was to be ascertained? If the court should be of opinion that the appellants were not liable to be rated at all, then the appellants assessment to the said rate was to be struck out. But, if the court should be of opinion that the appellants were liable to be rated, then the amount of rateable value it was agreed should be ascertained by the deputy-clerk of the peace for the county of Stafford, upon the principle laid down by the court, and the rate or assessment was to be amended accordingly; and, in this event, it was agreed that what was herein stated, as to the estimated annual amount of disbursements and deductions, either within or without the respondent parish, should in no way bind the parties in trying the question of rateable value before the said deputy-clerk.

The court, after hearing the arguments of the learned counsel, delivered judgment, expressing an unanimous opinion that the company were rateable, and that they were rateable as things now stood. The disbursements in respect of reservoirs, &c., were to be deducted, and were distributable in the ratio of receipts from places actually supplied at present, and without making any abatement in respect of a possible future supply to other places. In other words, their lordships ruled that the appellants were rateable upon the principles laid down by the court in the case of the West Middlesex Water Company—as reported in the JOURNAL OF GAS LIGHTING, vol. 8, page 104; and judgment was entered accordingly.

COURT OF BANKRUPTCY.

FRIDAY, JUNE 28.

(*Before Mr. Commissioner* HOLROYD.)

IN RE THE BOROUGH OF MARYLEBONE GAS CONSUMERS COMPANY (LIMITED).

This was the sitting appointed for making a call on the contributories.

Mr. DORIA appeared for the official liquidator, and proposed a call to the full amount—£1 per share.

The call was made, and ordered to be paid before the 30th of July.

Several contributories appeared in person, to claim exemption on the usual ground—that they had been induced to take shares by misrepresentation; but his honour declined to enter into the matter, the list of contributories having been definitively settled.

The debts of the company are about £2500; and it is said that the proceeds of the call will only yield a small dividend for the creditors.

Miscellaneous News.

BAHIA GAS COMPANY (LIMITED).

The First Annual Meeting of this Company was held at the Offices, Cloak Lane, on Tuesday, the 18th of June—HENRY POWNALL, Esq., in the chair.

The SECRETARY (Mr. A. Clarke) having read the notice convening the meeting, the following report and statement of accounts were presented.—

The directors of the Bahia Gas Company (Limited), in meeting the shareholders for the first time, have the pleasure of reporting to them the following statement of their proceedings since the formation of the company.

Before, however, entering into the detail of their arrangements, they desire to record their thanks to Mr. A. Angus Croll, for the valuable services rendered by him at the commencement of their proceedings, and for the gratuitous use of his office for many weeks, until suitable premises could be obtained for the future transaction of the business of the company.

The arrangements which the directors have entered into with Mr. Baker to take the present offices for seven years, at an annual rent of £120, will, they trust, meet the approval of the shareholders.

The first subject claiming the attention of the directors was the extent of the works required by the terms of the concession, and the amount of capital which would be necessary to complete them, and produce the necessary supply of gas.

The result of their most careful consideration led them to conclude that shares to the amount of £90,000 should be issued; this was done to the extent of £57,200, the contractors taking £17,620 additional shares between them; and the directors, having considered it advisable to give those parties in Bahia who were most favourable to the project an opportunity of taking shares, forwarded £15,000 to that city, which were most eagerly inquired after, making a total of £89,820.

The directors have much pleasure in stating that the first and second calls on the shares issued in England have been paid up, and that a third call, which became due on the 1st of May, has also been punctually met, with a few trifling exceptions.

The audited accounts, which are now submitted, will afford all information as to the financial position of the company.

By the terms of the concession, the imperial government of Bahia were under engagement to make over to the company any land along the sea-shore belonging to them, which would be suitable for the erection of the works. Upon the visit of the engineer to Bahia, the government land was not considered sufficiently eligible for the purposes required. Mr. Blount, therefore, selected a site that was private property, stating as his chief reason for so doing, that the expense of erecting the works on the site selected, together with the cost of purchasing the property, was less than would have been necessary had the land which the government offered been accepted and made available for the purposes of the company; also, that, by the purchase of this property, the company will be able to complete the works ready for gas making at least six months earlier than would otherwise have been possible.

The following are the terms upon which the purchase has been made:—

Purchase of land	reis 26,000 000	£2,925	0 0
Duty on ditto 8 per cent.	,, 2,080 000	234	0 0
Materials	,, 2,000 000	225	0 0
Register of documents—notary's fee	,, 160 000	18	0 0
Translation of procuration	,, 20 000	2	5 0
Stamps . . . dols. 43 200			
Bill brokerage . . ,, 44 440	,, 87 640	9	17 2
	reis 30,347 640	£3,414	2 2

Proceeding upon the report of your engineer, the directors have entered into contracts with Mr. John Aird, of Lambeth, for the supply of the whole main-laying, and works connected therewith, to the amount of £51,286; this amount is, however, dependent on the distance apart that may be determined on for the street lamps; and, as the government have decided that such distance is not to exceed thirty yards, the amount is not likely to be under estimated. Also, with Messrs. R. and J. Rankin, of Liverpool, for the retort-ovens and setting, ascension-pipes, hydraulic-mains, &c., condensers, breeze-scrubbers, purifiers, gasholders and tanks, retort-house and coal-stores roof, public lamps, engine, &c., for an amount of £23,600.

The following is the engineer's estimated expenditure and statement:—

Mr. Aird's contract	£22,500
Messrs. Rankins' ditto	23,600
Retort-house, buildings, &c.	2,300
Iron jetty, steam-lift, and tramway	2,000
Purchase of land	3,500
500 extra lamps fixed	2,000
Purchase of concession, &c.	7,000
Legal expenses, brokerage, &c.	836
Engineers	5,000
Resident engineer, 1½ year	1,200
Travelling	700
Secretary, 2 years	600
Service-pipes	1,000
Offices	250
Fees at Bahia	800
Directors attendance	1,000
Cottages and other buildings	4,000
	87,406

"I have only to remark that I hope to effect a saving on Mr. Aird's contract, but this is entirely dependent on the distance apart that may be determined on for the street lamps. Messrs. Rankins' contract remains unaltered, as, on valuing the deductions and the extras, I find they work out much the same in amount."

Not having immediate occasion for the money in hand, the directors considered it advisable to pay at once the amount agreed for the concession—viz., £7000—interest being allowed on the £3000 to be paid in cash, the rest being payable in fully paid-up shares; to this the concessionaire agreed, and the claim was accordingly settled.

The sum of £4250, part of £7000 deposited with the Bahia government, as security for the due fulfilment of the agreement entered into with them, will now be liberated, and forthwith received.

The following arrangement has been made with Mr. Barros Piemental, a gentleman of much influence and respectability at Bahia, and this agreement has been confirmed by the board:—

"The terms offered by you, on which you are willing to act as the legal officer of the contractors for lighting the city of Bahia with gas, known in London as the 'Bahia Gas Company (Limited),' are, that you receive an annual payment of £400 sterling. This payment is, moreover, understood to include all expenses incurred up to the present time. The payments to be made quarterly, and the engagement to be terminable by either party on giving three months notice.

"As agent of the gas company, I accept this offer, subject to the approval of the directors.

"The duties of the office you undertake are strictly in reference to all legal questions, and to matters on which your assistance will be required, such as petitions to Government, forwarding claims against the province, and the like; you will, in fact, consider yourself the agent through whom the company will negotiate all questions with the Government.

"The company, in thus engaging your personal services, must necessarily consider any non-residence at Bahia as seriously affecting the due carrying out of this arrangement.

"Trusting that in all things you will exert yourself to your best ability in the interests of the company,—I remain, &c."

The directors have now laid before the shareholders all the main features of their operations during the past year, and they trust that the progress made is equal to expectation, considering the short period which has elapsed since the formation of the company. Much of the progress is due to the zeal and energy of Mr. Blount, your engineer, whose services in visiting Bahia, and thus accelerating the operations of the company, deserve, and have received, the thanks of the directors.

In conclusion, the board have to express their earnest expectation that, by the 2nd December, when the empire rejoices in the birthday of their emperor, under whose wise direction internal improvements have progressed, tranquillity has prevailed, and the attention of the people has been more than ever directed to the peaceful triumphs of agriculture and legitimate commerce, the Bahia Gas Company will be able to add to the general brilliancy of the city, and join in the general congratulations with which the happy day is greeted throughout the Brazilian empire.

General Balance-Sheet, to March 31, 1861.

Dr.				*Cr.*			
To Plant (goods sent to Bahia)		£12,761	7 10	By Capital account, as under—			
Concession and preliminary expenses		6,191	2 2	304 shares £20, paid	£6,080	0 0	
Caution-money, at the London Joint-Stock Bank, deposited in the name of the Brazilian Minister.		4,250	0 0	25 ,, £10, ,,	250	0 0	
Office furniture		177	12 3	2,330 ,, £7, ,,	16,310	0 0	
	£23,380	2	3	155 ,, £5, ,,	775	0 0	
Salaries	£ 228	7	0	46 ,, £2, ,,	92	0 0	
Brokers commission	247	10	0		£23,507	0	0
Law expenses	45	4	0	2,860			
Advertising	212	16	0	Amounts overpaid		65	0 0
Rent of offices	30	0	0	Interest on deposit at bankers, and discounts		55	1 2
Stationery and printing	92	19	8	Bills payable		4,000	0 0
Petty office expenses	64	10	11	Law and Blount		337	13 0
	921	7	7	John Aird		585	14 10
Balance at bankers—General account	£1,249	18	8	Secretary, for petty cash overpaid		0	19 6
Deposit ditto	3,000	0	0				
	4,249	18	8				
	£28,551	8	6		£28,551	8	6

Approved—by order of the board. HENRY POWNALL, *Chairman.*

The CHAIRMAN said this was the first meeting of the shareholders, and he was sure that he was only expressing the feeling of the board generally when he said they were exceedingly pleased to see so large a number present on the occasion. He would now simply move the adoption of the report and accounts.

Mr. CROLL (deputy-chairman) seconded the motion.

Mr. LAMBERT said there was a paragraph in the report which stated that £15,000 worth of shares had been forwarded to Bahia. He should like to be informed whether those shares had been taken up by parties there?

The CHAIRMAN said they had not been. In consequence of a recent law passed in Brazil, and which the company would have come under the operation of, had the shares been sold there, it had been deemed advisable by Mr. Blount, the engineer of the company, to withdraw those shares. The law to which he referred would materially interfere with the company's operations, and also entail upon them considerable expense. There was no necessity to urge the sale of shares in Bahia, and therefore the directors approved of the course taken by Mr. Blount. The shares were now in the safe of the company, and awaited the decision of the present meeting as to their disposal, whether by distribution *pro ratâ* among the shareholders, or in any other way.

Mr. MAUDE asked for information as to the effect of the new law of the Brazilian Government.

Mr. BLOUNT, the engineer, said, at the time of his leaving England for Brazil, the directors had received intelligence that applications had been made by different people there for a considerable number of shares, and it was thought expedient for the interests of the company that a certain proportion should be reserved for distribution in Bahia or Rio, so as to create a local interest in the success of the undertaking. The directors accordingly allotted

750 shares for that purpose. When he arrived at Rio, he found that the Government had recently passed an Act for the regulation of banking and joint-stock companies, which would seriously interfere with their operations. The terms of it were different in many points to the English law, which fact alone would very much complicate affairs, inasmuch as the company would be working under one law in England and another in Brazil. There were also certain enactments which would enable the Government to interfere with the working of the company, and to go into the question of their accounts in the most rigid manner. He resolved, therefore, to take advice before issuing the shares; and he consulted with the agents of the English insurance companies, whose opinion was, that if they were brought under the operation of the law they would have to close their establishments, as it would effectually prevent them making any profit by their business. There were also many restrictions which would have been most irksome.

Mr. MAUDE regretted the circumstance, and thought arrangements might be made so as to enable Brazilian shareholders to hold their shares subject to the English law, if they chose to do so.

Mr. BLOUNT said the law to which he referred applied to all companies which issued shares in Brazil. This company was at present bound only by the terms of their concession; but, if they issued shares in Bahia, they would immediately come under the operation of the law regulating joint-stock companies there, and which, he was convinced, would be most prejudicial.

The CHAIRMAN reminded the meeting that the law did not, in any way, affect the rights guaranteed by the concession to the company; it only threw an impediment in the way of the sale of shares in Brazil. As he said before, there was no occasion for them to urge the sale of shares in Bahia or Rio; and, therefore, it would have been a pity to entangle themselves with a law which, at all events, was different to that under which they, as an English company, were conducting their operations.

Mr. MAUDE said he still thought it was to be regretted that an opportunity could not be afforded to capitalists in Brazil to become connected with the company.

The CHAIRMAN said there were gentlemen in Bahia who held shares in the company. One gentleman there held a hundred; but they were purchased in England.

Mr. LETCHWORTH inquired whether the Brazilian law might not operate prejudicially to the company, in preventing them from enforcing calls against defaulters in that country?

The CHAIRMAN said there would be exactly the same course taken with shareholders there as here; but, whether the company would have the same facility for enforcing their rights in such a case, was another matter.

Mr. MAUDE said, as there was £10 paid up on all the shares issued, he did not apprehend there would ever be much difficulty in that respect.

Mr. CROLL said it was undoubtedly desirable to have shareholders in the locality from which the rental of the company was derived; but the question which the directors had to decide was, whether it was desirable, for the sake of getting rid of a certain number of shares in Brazil, to come under the law referred to by Mr. Blount, instead of depending upon the security which the concession gave them, and which could not be at all interfered with by any change made by the Government there in the regulation of joint-stock companies? There was no difficulty in obtaining parties to take up the shares in that country; indeed, £20,000 worth were applied for, though the directors only sent out £15,000. Having regard to all the circumstances, the directors thought it best to avoid the risk and trouble in which they might be involved, and determined to leave the final decision, as to the distribution of the shares, in the hands of this meeting. He reminded the proprietors that, at the end of thirty years, the Government of the Brazils had the option of purchasing the works of the company at a valuation, or of continuing the concession for another thirty years. If, therefore, the company had come under the operation of the new law, and the Government were thus put in possession of all the *minutiæ* of their operations, and of the profits realized by them from year to year, there might be great difficulty in making the necessary arrangements at the end of the first term.

After a long conversation upon the subject, it was resolved that the matter should be left in the hands of the directors, to do therein as they might deem advisable. In answer to a proprietor,

The CHAIRMAN said, the directors were of opinion that another call would have to be made in about six weeks or two months. After that, calls would be made at intervals during the next year or fourteen months, by which period they hoped the works would be completed.

Mr. STRACHAN inquired about the item of £5000 as the allowance to the engineer, whether it was merely for personal services.

The CHAIRMAN said it covered the cost of drawing all the plans, personal services, preparing the contracts and specifications—everything, indeed, connected with the engineer's department.

Mr. STRACHAN: Does it include the charges connected with the erection of the works?

The CHAIRMAN: No; that is entirely a separate matter. In the works which we have taken credit for, that is provided for.

Mr. STRACHAN: Under what head is that?

The CHAIRMAN: Under the heads of "Retort-house, buildings, &c., £2500; iron jetty, steam-lift, and tramway, £2000." &c. There is no per centage charged for the superintendence of the erection of those works. We have a clerk of the works over there, superintending them, and his expenses and allowances come in with the general items of the erection.

Mr. STRACHAN: Does the estimate here given include the entire laying down of the mains, and the setting up of the works?

The CHAIRMAN: Entirely.

Mr. MAUDE: I take it, that it is a mere estimate of 5 per cent. upon the £100,000?

Mr. CROLL: The arrangement was made that there should be a fixed sum, so that the engineer should have no inducement to make the expenses larger. The estimate first given was £100,000.

Mr. MAUDE: Your present, I see, is about £90,000?

Mr. CROLL: It is; and that includes everything necessary to put gas into the gasholders—setting up the works, and everything.

The CHAIRMAN: And the superintendence of them till the works are completed, and the city lighted.

Mr. LETCHWORTH: Is the concession from the Imperial Government of Brazil, or from the provisional Government of Bahia? The report says, "By the terms of the concession, the Imperial Government of Bahia," &c.

The CHAIRMAN: That is a mistake; there is no Imperial Government at Bahia. The concession is from the provisional Government.

Mr. LETCHWORTH: In reference to the purchase of land alluded to, I see you are not going to take up the land which was to be made over to you; and there is an item of £234 for duty on that land.

Mr. YOULE (a director): We expect that to be returned.

Mr. BLOUNT: There is one point, in connexion with that matter, which I should like to explain. The land offered by the Brazilian Government has been applied for and obtained, and we are now applying for additional land adjoining, to make it available for the purposes of the company. It will not be lost sight of.

Mr. LAMBERT: It appears to me that the item "Retort House, &c.," is twice charged. I find it first of all in Messrs. Rankin's contract, and then in the engineer's estimate.

The CHAIRMAN: Messrs. Rankin's contract is for the roof of the retort-house only.

Mr. LETCHWORTH: May I ask, as half of the capital is now called up, and the engineer has paid a lengthened visit to Brazil, whether the directors are still of opinion that the capital with which they started will be adequate to complete the whole of the works without having recourse to what is the ruin of companies—the issue of preference shares or the creation of a debenture debt?

The CHAIRMAN: We are perfectly satisfied, as far as we have gone, that, with the utmost care and attention to the works, the capital will be amply sufficient to complete them and bring them into operation.

Mr. MAUDE: I suppose it is too early yet for you to have had any applications for a supply of gas. As there is to be a new distribution of shares, it would be as well to know what our prospects are.

The CHAIRMAN said there was a part of the engineer's report, which the directors did not think it desirable to print, in which he gave an estimate of the probable revenue of the company. He stated that it would be derived first, from the street and other public lamps; secondly, from private consumption; thirdly, from the sale of residuary products; and fourthly, from the supply of fittings. The Government had ordered 2000 street lamps to be provided, and the engineer estimated that they would have to supply 150 additional, or 2150 in all, for which the company would receive payment at the rate of 200 reis, or about £9. 10s. per lamp per annum. Assuming that those lamps burned three cubic feet per hour (including leakage), the consumption would be 23,000,000 cubic feet, which, deducting the expenses connected with them, would yield a profit of £9033. It was difficult to estimate what would be the amount of private consumption. It could only be arrived at by taking the experience of other towns. In England, as was well known, the private consumption far exceeded that of the public lamps. In Brazil, there were now two chief cities supplied with gas, from which a correct judgment of the probable consumption at Bahia might be formed. At Rio, the private consumption exceeded that of the public lamps, though this latter had been unusually large. At Pernambuco, the private lighting was as nearly as possible the same as that of the public lamps. From these two instances, it was fair to argue that at Bahia there would be a similar result. With time, the engineer stated, he had no doubt it would be so; but, for present purposes, he assumed that it would be only one half—viz.. 11,777,250 cubic feet per annum. The profit from the private consumption would depend upon the price charged. At Rio, the price was 18s. per 1000; and and at Pernambuco, it was limited to 23s., and the price actually charged was 21s. per 1000. If the Bahia Company, therefore, fixed their price at 20s., and allowed 20 per cent. for leakage, they would have a revenue, after deducting the cost of manufacture, of £6179. 18s., which, added to the profits derived from the public lamps, would amount to £15,213. The price obtained at Rio for coke was 50s. per ton, thus affording a large revenue to the company. At Pernambuco, the proprietors had sold all the coke they could spare, at 45s. The Bahia Company might fairly reckon upon the same, and take credit for £1500 a year from this source. From the sale of gas-fittings, a large profit was made at Rio and Pernambuco; but the engineer thought that, though it might answer at those places, a small profit only could be looked for at Bahia. He considered it would be more to the advantage of the company to provide fittings as reasonable as possible. in order to induce people to take gas. The total estimated profit was, therefore, £16,713, from which only the English expenses would have to be deducted, showing a large per centage upon the capital expended. This income, the engineer stated, he considered they might fairly expect shortly after the working had been commenced. This estimate of the engineers was very satisfactory to the directors, although they had not thought it desirable to print it in their report.

Mr. STRACHAN said he felt a delicacy in calling attention to one item in the estimated expenditure; but, as the company was in its infancy, and the proprietors had as yet received no interest upon their capital, he could not help regarding the item of "directors attendance, £1000," as rather a large one. He did not at all undervalue the services of the board, and if the charge was a usual one, he would say nothing further about it. He would take the liberty of asking whether that money had been already expended, or whether it merely had reference to the rate of remuneration which the directors would ultimately receive?

The CHAIRMAN said it was merely an estimate. The money had not been expended, and it rested entirely with the meeting to say whether they would give that, or any portion of it? The directors did not look for that remuneration in the first instance, and when they could offer a dividend of 10 or 15 per cent., the proprietors could show their liberality by increasing the amount.

The motion for the adoption of the report was then put and carried unanimously.

Mr. STRACHAN moved, and Mr. MAUDE seconded, a vote of thanks to the directors for their past services, which was cordially adopted.

Mr. LETCHWORTH, in complimentary terms, proposed a vote of thanks to the engineer which was also adopted. A similar vote to the solicitor, auditor, and secretary, was then passed, and the directors were re-elected.

Mr. Magnus Obren and Mr. Linging were appointed auditors for the ensuing year, and their remuneration fixed at £10 each.

Mr. MORRISON proposed, and Mr. PASHLEY seconded: "That the remuneration of the directors be £800 per annum," which was agreed to.

The CHAIRMAN, on behalf of himself and colleagues, returned thanks, and expressed a hope that when the directors met the shareholders on another occasion, they would be able to report the successful progress of the company.

After some conversation, it was agreed that the future meetings of the company should be held half-yearly, and the proceedings then terminated.

METROPOLITAN BOARD OF WORKS.

FRIDAY, JUNE 28.

DEODORIZATION OF THE SEWERAGE OF THE THAMES.

At a Meeting of the Board, held at the Office, Spring Gardens—J. THWAITES, Esq., in the chair,

Mr. BENNETT said that, on the 21st inst., he had given notice of a motion—"That he would call the attention of the board to the state of the river Thames, with the view of considering the expediency of measures being taken for the deodorization of the sewerage flowing into that river." Since he had given notice of that motion, he had been upon the Thames himself; and, whether it was owing to the rainy state of the weather we had had lately, or whether it was owing to some other cause, he would not say; but, certainly, he could find nothing offensive in the smell of the river. Therefore, although he firmly believed that it was the duty of the Metropolitan Board of Works to pay every attention to complaints, come from whatsoever

quarter they might, and particularly complaints which had reference to the state of the Thames, yet from what he could see and judge for himself regarding the condition of that river at present, he thought that all that was necessary for him to do to-day was, to withdraw his former motion, and simply to move—"That the engineer be requested to watch, from time to time, the state of the river Thames, and to report to this board should it be necessary, in his opinion, to take any steps on the subject."

Mr. LEGG seconded the motion.

Mr. ECKETT expressed a hope that the motion would not give rise to the making of unfounded complaints, or to any of that nonsensical talk respecting the Thames with which the ears of every member of the board must have been long familiar. Whilst, on the one hand, he was as desirous as any gentleman could be that everything should be done to render the river pure that necessity required, he was by no means inclined, on the other, to pass any resolution which might give rise to expectations that the board were about to expend money on mere experiments. They had spent a very considerable amount of money for deodorizing purposes a year or two ago, and and no very productive results were thereby caused.

Mr. Deputy HARRISON did not believe that any unfounded expectations could be raised by the simple passing of a motion requesting the engineer to pay attention to the subject, and to report. Last week, there had been so many complaints afloat touching the offensive effluvium arising from the Thames, that he had requested his friend, Mr. Bennett, to give notice of motion that he would call the attention of the board to the matter, with the view of considering the expediency of measures being taken for the deodorization of the sewerage flowing into the river. Since that notice had been given, Mr. Bennett had gone himself, and looked at the circumstances of the case, and now reported that, in his opinion, there was nothing of an offensive character of which to complain. His friend, then, was not raising any unfounded expectations by the course he was now pursuing. It was most probable that, if the motion submitted by Mr. Bennett were never brought forward, the engineer would feel it his duty, without receiving any instructions upon the subject, to keep a sharp eye upon the state of the Thames, and to report thereon; but, in order to guard against the possibility of so important a matter being overlooked, his friend was recommending that the engineer should be requested to report upon the condition of the river; and then, if its state was found to be such as to call for special attention, there was no doubt whatever that the board would lose no time in taking action. At present, the board were not called upon to lay out any money. Moreover, if it came to be a question of expenditure hereafter, there were others, besides the ratepayers of the metropolis, who would be called upon to contribute. Nothing could come of the motion, unless the engineer should happen to report that the river was becoming offensive; and then nothing could be done until due notice of motion on the subject had been given. For these reasons, he had great pleasure in supporting the motion of his honourable friend.

The CHAIRMAN said that an important letter had just been received from Mr. C. E. Lang, the chairman of the directors of the Woolwich Steam-Packet Company, which, very probably, the board would like to have read. He (the chairman) might take the opportunity of stating that he had not the slightest fear himself—and he had been upon the Thames to see the state of it—that they should this year suffer any inconvenience from the river. Past experience went to show that, after the month of May was over, there was very little to be apprehended from it. In fact, the bed of the river had been so thoroughly washed out that no inconvenience could arise. Complaints regarding its offensive state above bridge had, no doubt, been made within the past week, but he believed that many of these complaints had been caused by the discharge of oil, and other matter of a like kind, from the late fire in Tooley Street into the Thames. At all events, it was probable that that was the real cause.

Mr. J. POLLARD, clerk of the board, here read the following letter from Mr. C. E. Lang:—

Maze Hill, Blackheath, June 26, 1861.

Sir,—I regret having to call your attention to the present impure state of the river Thames, but more particularly to the noxious effluvium arising therefrom, which has been increasing for the last few days. This morning it was very offensive on the whole distance from Greenwich to London Bridge, and above, to which my attention was several times directed by a fellow passenger, a resident on Blackheath. Having been one of a deputation who had the honour to wait on your board on a similar occasion two or three years since, when, by your directions, measures were adopted by systems of deodorization, by the discharge of lime, &c., into the various sewers, &c., which brought about a most beneficial result, and having been a daily traveller on the Thames for the last twenty-five years, I am emboldened to take the liberty of thus addressing you, and humbly, but urgently, to suggest for your consideration whether it would not be desirable at once to commence a similar system before the stench reaches to the height to which it did on the former occasions? In its present state, it may probably, by prompt measures being adopted, be kept under control; but, in the event of the temperature increasing, of which there are indications, and nothing being done, it might then be found impossible to subdue the stench. Apologizing for this intrusion on your valuable time, but believing the case to be serious and urgent,—I am, sir, your most obedient humble servant,

C. E. LANG,
Chairman of the Directors of Woolwich Steam Packet Company.

John Thwaites, Esq.,
Chairman of Metropolitan Board of Works.

Mr. H. L. TAYLOR said it must be something very extraordinary indeed, that would induce the board at the present moment to throw away thousands and tens of thousands of pounds in attempting to deodorize the sewerage flowing into the Thames. He was, therefore, opposed to the giving of any encouragement to unfounded expectations upon that subject by adopting a motion whereby they would instruct their engineer to look after the smells upon the river. (A laugh.) If there were smells upon the Thames, the members of the board could smell them themselves. (Laughter.) He would rather leave the matter in the hands of Mr. Bennett himself, and in the hands of the board generally; and, as the members met once a week, they could easily take action as soon as it was really necessary to interfere. But he would not encumber the engineer with any additional business at present, because the mind of that gentleman was fully occupied just now with the very large works he had under his care and management. Therefore, giving full credit to Mr. Bennett for that zeal for the public welfare which had induced him to introduce the subject, he believed that there was no occasion whatever for the board to interfere, and, that no instructions ought to be given to the engineer.

Mr. SAMUDA said he should be very sorry if the motion were negatived, or withdrawn. Spending, as he did, a great deal of his time at Poplar, he could safely bear his testimony to the fact that the offensive state of the Thames came constantly under his observation, that it was becoming a very serious nuisance, and that it was getting almost as bad this year as it had been the year before last. He used to have to change men, twenties and thirties at a time, who were working for him on the river, because of their inability to stand the smell; and that same offensive effluvium was beginning now again to arise. There had been a little relaxation from it within the last few days, most probably because of the heavy rains; but he should be glad that the board would pay attention to the subject, for it was of the deepest importance, and that they would act in such a way as they might consider most suitable, either by giving the necessary instructions to their engineer, or by communicating with the other metropolitan authorities.

Mr. FREEMAN contended that the time was come when the board ought to come to a distinct understanding as to whether they were to grapple with this giant evil or not. If they were to put the decision of that question off to the last moment, if they were not now to know whether it was to be grappled with by themselves or by the Government, they would be acting in a highly reprehensible manner. If they were to say at once that it was not their duty to purify the Thames, let that understanding be fairly come to, let it go forth to the public, and let the public form their conclusions as to the propriety of the course thus adopted. But, let it be recollected that great complaints were made the year before last that the board had put off the consideration of the state of the river to the last moment, and that all the antidotes which were used had produced very little effect. This was an argument used by their opponents; and, if their opponents had sought their overthrow upon these grounds then, they would not be prevented from using similar weapons against the board now, if the latter afforded them the pretext. He concluded by saying that there were three questions for consideration—first, whether the board meant fairly to grapple with the evil? secondly, whether they meant to ask the Government to pay a portion of the necessary expenses? and, thirdly, whether it was their determination that they would have nothing whatever to do with the matter?

Mr. ECKETT observed that the remarks just made by Mr. Freeman were not germane to the motion. He (Mr. Eckett) was still of opinion, looking at the letter of Mr. Lang, and listening to the various speeches, that it would be exceedingly impolitic to adopt the proposition of Mr. Bennett. It would certainly have the effect, if adopted, of encouraging public complaints and representations, which the board would be expected to receive and answer. To say the least, it was a most injudicious thing to take up this question, and throw the whole onus of carrying it out upon the shoulders of one individual. Supposing anything unforeseen should occur, then all the blame would be thrown upon their engineer, and, in any case, the engineer would feel himself induced to come forward and make representations which the board would feel themselves bound to act upon. He had never heard Mr. Freeman make a speech yet which that gentleman did not himself answer before he sat down. In the present instance, his (Mr. Freeman's) allegation was, that two years ago the board incurred a large expense in deodorizing the sewerage flowing into the river, and that that they had done no benefit because they had commenced their operations late in the season.

Mr. BENNETT rose to order. Mr. Eckett had spoken before.

Mr. ECKETT presumed that the force of his remarks was being felt by Mr. Bennett, and that it was the power of that force which prompted the gentleman to rise from his seat. (Laughter.) He (Mr. Eckett) contended that he was perfectly in order, because, since he had spoken before, Mr. Lang's letter had been read; to that letter he was alluding, and upon that letter Mr. Taylor had been permitted to address the board.

Mr. DIXSON rose to speak to the motion, but

Mr. ECKETT refused to give way. He said that Mr. Lang's letter, alluding to the deodorizing process used two years ago, was fairly before the board, and that Mr. Freeman had been referring to that letter.

Mr. FREEMAN said that this statement was entirely incorrect.

Mr. ECKETT promised to bow to the decision of the chair.

The CHAIRMAN said that Mr. Eckett had no right to hang a second speech upon Mr. Lang's letter.

Mr. ECKETT observed that it was impossible for him to speak upon the letter without making a speech. (A laugh.) The letter called upon the board to institute a series of operations for the deodorizing of the sewerage flowing into the Thames. He wished to know whether he could not speak upon that?

The CHAIRMAN said it was in the power of the honourable member to express an opinion upon the letter, but that he could not take advantage of that communication to open up the whole question.

Mr. FREEMAN said he had been accused by Mr. ECKETT of having recommended the course the letter pointed out. He had done nothing of the kind. All he had said was, that it was advisable the board should decide for itself, and not postpone its decision to the last moment.

Mr. DIXSON said that the docks, which were fed from the river, were at present in a most deplorable and disgraceful state, and that something ought to be done immediately to remove the offensive odours arising from them. He feared that the evils apprehended by Mr. Lang and Mr. Samuda would come quickly, and he thought the suggestions contained in the letter of the former were sound and well-timed. The late heavy falls of rain had done some good, and, if the Almighty would send down a still heavier fall, much greater good would be done.

Mr. DOULTON suggested that the matter should be left where it stood at present, without any reference being made to the engineer. Then, if gentlemen could discover what he (Mr. Doulton) had failed to do, though he was upon the river every day—namely, that these nuisances existed—no doubt they would bring the subject before the board, and the latter would act with promptitude. Mr. Freeman had argued in favour of taking the matter in hand at once, as if the board would want weeks and months to consider it. If the engineer would recommend anything at all, he most probably would say that the best mode to adopt would be that of the year before last. Nevertheless, the adoption of that mode would be tantamount to the throwing away of so much money. Still, the question of the best plan would arise at the board, when the members were asked to take it into consideration; but the time for so considering it had not yet arisen.

The CHAIRMAN observed that the deodorizing operations could be put in motion in three days.

Mr. CRELLIN expressed a hope that the motion would be withdrawn.

The CHAIRMAN thought great responsibility would be thrown upon the engineer if the motion were pressed. Every member was watching carefully—he (the chairman) was watching most carefully—to see whether there was really a case to justify the interference of the board; and, if such a case should arise, he was quite satisfied the board would discharge its duty.

Mr. CRELLIN had no doubt the chairman was speaking the truth, and that the board would act with vigour. He thought the subject was now before them, because the smell on the river had commenced, and was increasing to such an extent that Mr. Samuda would shortly be obliged to change his men daily. He presumed the offensive odours of Monday and Tuesday last had arisen from the oil and other substances flowing from the burning warehouses; but certainly, if those abominable odours were to last, it would be absolutely necessary for the board to interfere.

Mr. CARPMAEL hoped the motion would be withdrawn. There was no member more capable of bringing this matter before the board than Mr. Bennett was; and, if he investigated the plans pursued by the board on the former occasion when the Thames was offensive, he would see that a credit-

able course was then taken by the members. It was important that the burthen in this case should be borne on the shoulders of every member. There were many of them constantly on the river. Let those gentlemen see for themselves, and bring the subject forward if they found the Thames in such a state as to require interference. He had experience in docks, and he had always found them to be in a far worse state than the current was in the river. Though the docks were supplied with water from the river, yet it would always be found that the state of the water in them was far worse than the state of the water in the river. Therefore, unless the docks were cleaned very often, and fresh water was introduced into them, it was quite possible, and probable too, that they would generally be in a very bad state. But the board ought not to interfere, unless the water in the current in the neighbourhood of the docks was in an offensive condition.

Mr. HUGHES opposed the motion, and said there was no doubt the board would act instanter and with vigour if the Thames became so offensive as to affect the health of the inhabitants.

Mr. BENNETT expressed his regret that he could not agree with the opinions expressed by the chairman and others, that he should withdraw his motion. He had not expected so long a discussion, he himself having purposely abstained from the introduction of every topic that could provoke debate. He thought the date of Mr. Lang's letter would show that the offensive odours of which that gentleman complained had proceeded from the fire. It would neither be right nor proper to leave a matter of this kind in the hands of individual members. It was the duty of the engineer to undertake the task. He confessed he was suprised at Mr. Eckett thinking that the motion, if carried, would give rise to unfounded expectations on the part of the public. The board would never act upon the opinion of an individual member, that the Thames was prejudicial to health; but, if the question were wholly placed in the hands of the engineer, and he reported that the state of the river was offensive, then the board would doubtless take prompt and vigorous measures to remove the nuisance.

The board divided, when there appeared—

For the motion	6
Against it	29
Majority against it	— 23

The motion was consequently lost.

THE SALE OF GAS ACT.

DUTIES OF INSPECTORS.

The Gas Committee of the Borough of Greenock submitted, at the May sitting of the Water Trust, the following report on the duties to be performed by the Inspector to be appointed under Lord Redesdale's Sale of Gas Act:—

DUTIES OF GAS INSPECTOR.

1. Generally, he shall be guided by the provisions of the Act. 22 and 23 Vict., cap. 66, intituled, "An Act for Regulating Measures used in Sales of Gas" (13th Aug., 1859), a copy of said Act to be given to the inspector on his appointment being intimated to him; and also a copy of the present instructions.

2. In testing meters, he shall strictly conform to the second section of the said Act, which defines the only legal standard measure for the sale of gas by meter; to section 12, which declares that no meter shall be stamped which registers quantities varying from the true standard more than 2 per cent. in favour of the seller, or 3 per cent. in favour of the buyer; and to section 13, which describes the rules to be observed in testing meters for soundness, or leakage for the per centage of error in measurement and registration, and for ascertaining the temperature of the water, gas, and air used at such testing. The inspector, in bringing these rules and provisions into practical operation, shall take care that each meter, when being tested, shall be properly levelled, *i.e.*, have the proper quantity of water, and be set fair on the bench; and that it shall, first, be tested for soundness by having a light passed over all the case, especially over the seams and joints; second, that it shall then be tested for its registration, slow or fast as the case may be, burning the full complement of lights it is made to carry; third, if found correct, that it shall then be tested at a blue light; fourth, that all the lights shall then be shut off, the gas turned on, and the meter allowed to stand to see if it will move; fifth, that care be taken to have the temperature of the room as equable as possible.

3. Any of the meters at present in use, and all meters hereafter to be purchased by the gas committee, shall be brought to the inspector at the time, and in the manner to be pointed out by the water trust, or by any committee whom they may appoint, and shall be tested by the inspector personally (and not by a subordinate), where his testing apparatus is kept. The inspector shall, if desired, inquire personally, and report to the water trust, or their said committee, in the "remark column" of book A after-mentioned, upon all complaints from consumers in regard to meters, and shall, in such "remark column," state his opinion as to said complaints being respectively well-founded, or otherwise, and the means taken by him, or that he would recommend to be taken, to rectify and obviate the complaints. The inspector shall also endeavour to arrange disputes and disagreements regarding meters, if desired by and under the direction of the water trust, or their committee. The inspector to be held responsible for the proper working of the consumers meters. All necessary instruments, machinery, and apparatus for fulfilling the duties imposed on the inspector, to be furnished to him by the gas committee.

4. The inspector shall be provided with suitable premises, and shall attend therein for the due performance of his duties as inspector, every lawful day from ten o'clock forenoon till four o'clock afternoon, and any further hours as may be necessary for the performance of his duties, and shall be responsible only to the water trust, or their committee, for the performance of the duties of his office as herein described.

5. The inspector shall, immediately after being appointed, take the necessary steps to get his office and testing apparatus in working condition, and shall personally keep the book A, in which he shall regularly, and in the order of date, enter every gas transaction of which he takes cognizance in virtue of his office, and, in particular, every meter tested, the date of testing, and the date of stamping; or, if rejected, the date of rejection, and the reason therefor, and any other particulars deemed necessary; and he shall, if required, attend personally each ordinary meeting of the committee which may be appointed by the water trust to have control and superintendence relative to the matters herein mentioned; and he shall produce, on such occasions, the said book, and shall answer all questions regarding the entries therein.

6. The inspector shall be bound to obey only the orders of the water trust, or their said committee, in all matters appertaining to his office, and, in particular, as to the rotation in which meters shall be tested, in what manner meters shall be stamped so as best to prevent fraud, what quantity of gas within the discretionary limits named in section 13 of said Act for the test of soundness shall pass during the test for each size of meter, and how the inspector shall secure impartiality in the order in which he stamps meters tendered to him and in the execution of his office generally. He shall instantly report to the water trust, or the committee, if hereafter any meter is fixed or given out to consumers of gas in Greenock, without first being stamped as correct by the inspector. The inspector shall, if required, take the "states" or indexes of all meters pointed out to him by the water trust, or their said committee, in order that the true rate of consumption by such meters may be correctly ascertained.

7. The inspector shall test by photometer and bromine, and otherwise if required, the illuminating power and purity of the gas supplied to the inhabitants of Greenock, when and so often as he thinks necessary, or as he shall be directed by the water trust or their said committee; such testing to be done daily, if convenient, but at least thrice a week (each testing to be inserted in the proper column therefor in book B, a form of which is subjoined hereto). And the inspector shall present to the water trust, or to their said committee, so often as they require, a report stating the number of examinations on which the report is founded, and the maximum, minimum, and average illuminating power or purity, or the illuminating power and purity from day to day, or at longer intervals, of the gas supplied during the whole period to which the report relates, with such other information and remarks thereon as may be deemed necessary.

8. The inspector shall test and report in book C, a form of which is subjoined, as to the public and private lamps, and, in particular, as to the pressures upon and quantity of gas consumed per hour by each description of burner in said lamps at the various pressures at the works during the first, second, third, and fourth parts of the night, said testing to be taken by the inspector personally, at such times and in such a manner as may be deemed necessary, or as may be fixed by the water trust, or their said committee. He shall enter in said book C the initial pressure at his office, as indicated by the self-registering gauge, at such hours as he may be desired. He shall call each day, Sunday included, at the gas-works, and leave a notice in writing, at least two hours before sunset, stating the number of public and private lamps to be lit, the time at which they are to be lit, and the time at which they are to be extinguished, and shall enter the gross number of lamps referred to therein in the remark column of said book C. He shall call each lawful day at the police office to inquire (as required by their printed regulations) if the police watchmen have observed any of the public lamps burning improperly; and, if there be any such report, the inspector shall enter the circumstance in the "remark" column of book C, and shall take immediate steps to get the matter rectified. Generally, the inspector to see to the public lamps being properly supplied and kept in good order, and cleaned at regularly stated intervals. The inspector shall check the accounts annually rendered to the water trust and harbour trust respectively for public lamps, and, if correct, he shall certify on each account that the quantity of gas charged therein corresponds with the quantity consumed; and, if the gas charged for be in excess, or be undercharged, he will certify the true quantity that ought to be paid for. And the inspector shall enter in the "remark" column of the aforesaid book C the date at which he checked the accounts, and the quantity of gas which he reported should be paid for by the water trust and harbour trust respectively, commencing on the day of , and ending on the day of .

9. The inspector shall be elected along with the other officials of the water trust annually in November. His salary to be £100 per anuum, payable quarterly. Candidates to be advertised for in the JOURNAL OF GAS LIGHTING, and in the local journals published in Greenock. Applications and testimonials to be lodged with the town-clerk by the 20th of June next.

At a meeting of the trust, held on the 18th ult., the PROVOST, in taking up this question, detailed what had induced them to take the appointment into their own hands, and what had led to this report, which had laid on the table since the last meeting, being taken up. In that report, he considered a great deal there intended to be imposed on the inspector which should properly belong to the manager of the gas-works and his assistants. It would be as well to have the inspector as clear of the gas-works as possible, and all that this trust should look after was, that the public got fair quantity and quality, and, as for inspecting the lamps, that was the duty of the manager of the gas-works. He should wish that the inspector were clear of the gas-works altogether, so that he would be pointed out to the community as one worthy of their confidence. He, therefore, moved that the report be remitted back to the gas committee for reconsideration, and he hoped that they, in doing this, would endeavour to carry out the views he had expressed.

Mr. MORTON was at a loss to understand wherein the Provost's views differed from those mentioned in the report. That report provided that the inspector inspect the meters, register the quantity properly, test the illuminating power, and see that the quantities charged for the public lamps are properly charged, and, therefore, must order when these lamps are to be lighted, and when extinguished.

The PROVOST: That is where I differ.

Mr. MORTON said that the inspector represented the community, and ought to say at what time the lamps should be lit, and when extinguished.

The PROVOST said these were things he objected to, and the result of which would be to bring the inspector into collision with the manager of the gas-works, and lead to no end of dispute. And then the idea of a man getting up three or four times in the night to see after the public lamps was absurd,—if such a thing should be done, it should be by the police.

Bailie M'ILWRAITH said it occurred to him that the Provost was right, and Mr. Morton wrong. An inspector neither could nor dare perform the duty under discussion. The trust makes a bargain with the gas committee, that the lamps be lighted at such hours during certain months. They pay by contract, whereas private consumers pay by meter.

Mr. MORTON said that the matter stood simply thus:—the trust instructed the inspector that they wanted the lamps lighted during certain hours, and that he instructed the manager, and saw that the instructions were fulfilled, so that when it came to be paid for, they could be satisfied that the account was correct. At present, it was said there was an overcharge made; now this was the only way by which they could check it.

The PROVOST said that all the duties set down in the report were impossible to be performed by one man.

Mr. SERVICE held that the lighting of the lamps should not be left entirely in the hands of the manager of the gas-works, he being in the position of the seller without any check. The gas was charged by the description of burner, but it was alleged that the gas passing through the burners was much less than what is charged in consequence of the workmen substituting smaller burners. The inspector would not require to get up out of his bed every night, neither would he interfere with the manager in his duties. When such an unpleasant fact was before them that £600 had been overcharged, it was highly desirable the matter should be put right.

The PROVOST said, all he wanted was that the inspector should be as far as possible disconnected from the trust, and not interfering with the manager of the gas-works, for he, like that manager, would make the most of his position.

Mr. MORTON said as to the objection of ordering the lamps to be lighted, it must be seen that the inspector, in order to have the requisite knowledge by which he could check the accounts, must be the medium of communication between the trust and the manager in seeing the work done. As to testing the pressure during the night, it was an important matter and must be frequently done, but not more than four or six times in the year.

Bailie CAIRD said that in Glasgow the pressure was given every hour during night and day by a self-registering gauge, and they had a machine of the same kind in the gas-works.

Mr. MORTON said that the gauge told the pressure at the works only, but this referred to the pressure at the point of burning. There was a provision in the report for the initial pressure at the works, but that was not enough; they must have it also at the burning point. He thought it better, perhaps, to leave it with the gas committee.

Bailie CAIRD said Mr. Morton was wrong if he thought him mistaken.

Mr. ANDERSON, holding that details should always be discussed in committee, seconded the motion that the report be remitted back.

After some further discussion, the motion was agreed to.

SOUTHAMPTON TOWN COUNCIL.

WEDNESDAY, JUNE 19.

LIGHTING THE PUBLIC LAMPS.

The special works committee reported that the Southampton Gas Company had made an offer to them that, on the confirmation of the new contract, and contemporaneously therewith, they would reduce the price of gas to private consumers to 4s. 9d. per 1000 cubic feet. The Shirley Gas company had offered to light that part of the town in a line with Commercial Road, and the district to the north of that line, at £3. 15s per lamp. The committee

recommended the local board to accept the offer of the Southampton Gas Company to light the public lamps at £4 each; that the contract should be for three years, and commence at Michaelmas, 1861; and that the public lamps should not be lighted during the months of June and July, and five nights at each full moon during the months of May and August. By the adoption of this proposal, £100 would be saved to the town, and deducted from the payment of £4 for each lamp to the gas company. The committee were of opinion that it was not expedient to entertain the offer of the Shirley Gas Company.

Mr. PAYNE said was it possible that the committee could have recommended that the lamps should not be lit in the High Street of Southampton during three months of the year? Instead of thus saving £100 a year, they would want twenty-two more policemen. He trusted that Southampton had not come to this. He advised that the portion of the report suggesting the lamps not being lit during a certain part of the year be not adopted.

Mr. BOWMAN remarked, it would be more satisfactory to refer the whole matter to the committee.

Mr. Alderman CLARK moved, and Mr. PERKINS seconded, the adoption of the report.

Mr. Alderman PALK trusted that the council would not see it right to accept a contract upon such conditions as a saving of £100. He advocated the continuous nightly lighting of the lamps; if not, there would be disturbances at night, burglaries, and a difficulty in the apprehension of offenders. The contiguity of Southampton to London gave access to this port of some of the worst characters of the metropolis, and afforded them facilities for taking property, and getting away with it. Under all these circumstances, it would be very inexpedient that the council should adopt the suggestion of the committee; and he would propose, as an amendment to the proposition for the adoption of the whole report, that we should have the lamps continuously lit on each night throughout the year, as had hitherto been done.

Mr. Alderman CLARK said, the gas company did not wish the reduction, as their staff of men was kept up just the same, and the only saving to them was in the consumption of coal.

Mr. LE FEUVRE was in favour of the whole subject being referred to the committee for reconsideration. He supposed that the fact of three new magistrates being made in the ward of St. Lawrence was in consequence of the state of Mr. Alderman Palk's immediate neighbourhood.

The council divided on an amendment that the subject be referred back to the committee:—

For—Messrs. Le Feuvre, Knight, Hearne, Cocks, Copeland, Harfield, Bartlett, Payne, Lungley, Bowman, and Solomon—11.

Against—Messrs. Cooksey, Randall, Williams, Ransom, Leigh, Dixon, Churton, Rogers, Carter, Bishop, Davis, Palk, Blatch, Clark, Perkins, and the Mayor—16.

Neutral—Mr. Lock.

The amendment being lost, the original proposition was carried—the gas company's contract to be accepted, and the lamps lighted all the year round:

For—Messrs. Cooksey, Lungley, Randall, Williams, Solomon, Randall, Leigh, Dixon, Churton, Rogers, Carter, Bishop, Davis, Palk, Blatch, Clark, Perkins, and the Mayor—18.

Against—Messrs. Le Feuvre, Knight, Hearne, Cocks, Copeland, Harfield, Payne, and Bowman—8.

Neutral—Mr. Bartlett and Mr. Lock—2.

ON THE COLOURING MATTERS DERIVED FROM COAL-TAR.

By MR. W. H. PERKIN., F.C.S.

[A Lecture delivered before the Chemical Society on Thursday, May 16, 1861.]

(*Continued from page* 448.)

Bleu de Paris.—This is yet another colouring matter produced under circumstances similar to those which give rise to fuchsine. MM. Persoz, V. de Luynes, and Salvétat, give the following account of its preparation and properties:—"Nine grammes of bichloride of tin and 16 grammes of aniline, heated for thirty hours to a temperature of about 180 centigrade, in a sealed tube, produce neither a red nor a violet, but a very pure and lively blue. This blue, which resists acids, darkens in colour by alkalies, but passes to a groselle violet when submitted to this agent in a concentrated state. It preserves its beauty of colour by artificial light, and it dyes animal fibres of a shade whose beauty leaves nothing to be desired." I repeated the above experiment twice, and was inclined to give up in despair, for, instead of a fine blue, I obtained nothing more than a dirty-green product. But, from this unpromising product, I at last succeeded in obtaining this beautiful blue colouring matter, and found it to possess all the properties mentioned above. MM. Persoz, V. de Luynes, and Salvétat, have lately given a more particular account of this colouring matter. They describe it as crystallizing from the alcoholic solution in the form of fine needles, having an aspect similar to that of ammoniacal sulphate of copper. It is soluble in water, alcohol, wood-spirit, and acetic acid; but insoluble in ether and bisulphide of carbon. With concentrated sulphuric acid, it forms an amber-coloured solution, which water converts into a magnificent blue liquid. Strong nitric acid decomposes it; chromic acid precipitates it from its aqueous solutions without decomposition; chlorine destroys it; sulphurous acid does not decolourize it. I found that sulphide of ammonium is also without action upon it. It is precipitated from its aqueous solutions by alkalies and saline compounds.

Aniline Green, or Emeraldine.—Most chemists who have worked with aniline in the laboratory must have noticed the peculiar green-coloured substance which forms on the outside of the various species of chemical apparatus that have been standing in the vicinity of any quantity of this body. This product is aniline green. Aniline green has been known for several years. It may be formed by various processes. One process consists in oxidizing aniline with chloric acid. This is effected by mixing a hydrochloric acid solution of aniline with chlorate of potassium. It may also be obtained by oxidizing a salt of aniline with perchloride of iron. Obtained by either of these processes, it precents itself as a dull green precipitate which, when dried, assumes an olive-green colour. It is insoluble in water, alcohol, ether, and benzole; sulphuric acid dissolves it, forming a dirty purple-coloured solution from which it is precipitated unchanged by water. With alkaline solutions, it changes to a deep colour somewhat similar to indigo: but acids restore it to its original colour. The colour of aniline green is much enlivened by the presence of an excess of acid; but, unfortunately, as soon as this acid is removed, it passes back to its normal colour.

The bases tolzidine, xylidine, and cumidine yield colouring matters under the influence of oxidizing agents; and also when submitted to the action of reducible chlorides at high temperatures, analogous to those obtained from aniline under similar circumstances; but the results generally are not so good, the colour of the products becoming tinged with brown as the bases get higher in the series.

Nitroso-Phenyline.—This remarkable body is obtained by the action of nascent hydrogen on an alcoholic solution of di-nitro-benzole. It is represented by the formula $C_6H_6N_2O$. This body is almost insoluble in water, but soluble in acids, and in alcohol, producing crimson-coloured solutions, but its colour is not nearly so brilliant as that of fuchsine. It seems gradually to decompose when kept. I have not tried any experimens with it as regards its dyeing properties.

Dinitraniline.—Dinitraniline is obtained by decomposing dinitro-phenyle citraconamide by means of carbonate of sodium. When pure, it crystallizes in yellow tables. It dissolves very sparingly in water, producing a yellow liquid. It has the formula $C_6 H_5 (N O_2) N_2$. It does not combine with acids or alkalies, although it appears to be more soluble in acidulated than in pure water. Silk can be dyed yellow with dinitraniline.

Nitrophenylene-diamine, or Nitrazophenalimine.—Dinitraniline, when submitted to the action of sulphide of ammonium, changes into this beautiful base, which crystallizes in needles of a red colour, somewhat similar in appearance to chromic acid. It dissolves in water, forming a yellow or orange-coloured solution like that of bichromate of potassium. Alcohol and ether dissolve it freely. It is not at all similar to fuchsine in its properties, as it forms salts of yellowish brown or grey colour; whereas, fuchsine forms crimson ones. I mention this because nitrophenylene-diamine has been spoken of as having properties similar to those of fuschine. This base possesses the power of dyeing silk a very clear golden-yellow colour.

Picric or Dinitrophenic Acid.—This beautiful acid was discovered as early as 1788, by Hausmann. It may be obtained by the action of heated nitric acid on a great variety of substances; the following are the names of some of them:—indigo, aniline, carbolic acid, saligenine, salicylious and salicylic acids, salicin, phlorizin, cumarin, silk, aloes, and various gum resins, it is now prepared for commercial purposes from carbolic acid, and also from certain gum resins. I have prepared it from carbolic acid on the large scale, in the following manner, with success:—As strong nitric acid acts very violently when brought in contact with carbolii acid, I have found it best to use an acid having a gravity less than 1·3, so as partially to convert the carbolic acid, and afterwards to boil it in stronger acid, to change it into picric acid. On diluting the acid solution, the impure picric acid precipitates. To further purify this, it should be crystallized from boiling water. When preparing this product for commercial purposes, it is advantageous to let all the nitrous fumes formed in its preparation, together with a certain amount of atmospheric air, to pass over a fresh quantity of carbolic acid. This will absorb them, and at the same time be converted into nitro, or dinitrophenic acid, and consequently diminish the quantity of nitric acid required for its manufacture. When preparing picric acid from carbolic acid, there is always a quantity of a yellow, resinous matter produced, and at times a considerable quantity of oxalic acid. The latter is always produced when the acid which is used to finally convert the carbolic acid is too weak, for then it rapidly decomposes the picric acid, yielding carbonic and oxalic acid. Picric acid, when pure and dry, is of a light primrose-yellow colour, crystallizing in strongly-shining lamina. It possesses an extremely bitter taste, and dissolves in water with a beautiful yellow colour. When digested with protoxide of iron in the cold, it yields a brown amorphous compound, which dissolves in water with a blood-red colour. Picrate of copper is of a beautiful yellowish-green colour when in solution. If required for dyeing purposes, it may be prepared by mixing a solution of a picrate with sulphate of copper. Picric acid was introduced as a dye about five or six years since, by MM. Guinon, Marnas, and Bonney, eminent silk-dyers of Lyons. Many of the cheap products sold as picric acid are of a brown colour, and consist of impure di- and tri-nitrophenic acids, and sometimes of this crude product and ground turmeric.

Rosolic acid.—Runge first noticed this substance in 1834, when studying creosote, but it was almost lost sight of until again observed by Dr. Hugo Müller only a short time since. He accidentally observed that when crude phenate of calcium is exposed to a moist, heated atmosphere, as that of an ordinary drying-stove, it gradually changes in colour, and assumes a dark-red tint. This colouration is owing to the formation of rosolate of calcium. I have lately heard that phenate of sodium undergoes a similar change. Dr. Müller prepared rosolic acid from this product in the following manner:—The crude rosolate of calcium is first boiled with a solution of carbonate of ammonia. By this means a crimson solution, containg the rosolic acid, is obtained. This solution is then evaporated nearly to dryness, during which process ammonia is given off, and the crimson-coloured liquid gradually changes to a yellowish-red, and at the same time a dark resinous matter separates. This resinous substance is crude rosolic acid. In order to purify it, it is submitted to the following treatment, proposed by Runge:—The crude rosolic acid is dissolved in alcohol, and hydrate of calcium added in slight excess. The beautiful crimson solution which is thus formed is agitated for some time with the undissolved portion of the lime, filtered, and the filtrate diluted with water, and, lastly, the alcohol distilled off. The residuary rosolate of calcium is then decomposed with just a sufficient quantity of acetic acid, and the whole boiled until every trace of free acetic acid and still adhering alcohol is volatilized. The rosolic acid separates first as a red precipitate, but, when heated, cakes together, forming a dark, brittle substance, having a greenish-metallic lustre.

It may be still further purified by solution in alcohol, to which a little hydrochloric acid has been added, and precipitation with water. Pure rosolic acid is a dark amorphous substance, possessing the greenish-metallic lustre of cantharides. Its powder is of a red, or rather scarlet, shade, which, if rubbed with a hard, smooth body, assumes a bright gold-like lustre. In thin layers, rosolic acid presents an orange colour when viewed with transmitted light, but, with reflected light, a golden-metallic appearance. When thrown down from an alcoholic solution with water, it forms a flocculent precipitate of a bright-red colour, resembling the basic chromate of lead. Concentrated acids, as acetic, hydrochloric and sulphuric, readily dissolve rosolic acid, forming brownish-yellow solutions, from which water precipitates this acid unchanged. To cold water, it imparts a bright-yellow colour, and it is more soluble in hot than cold water. Alcohol and ether dissolve rosolic acid with great facility, forming orange or brownish-yellow solutions which, on evaporation, leave it in an amorphous state. With ammonia, caustic alkalies, and caustic earths, it forms dark-red compounds, which dissolve with a magnificent red colour. These compounds are very unstable. No precipitates are formed with aqueous solutions of the rosolates, with the basic acetates of lead, or with any other metallic salt; nor is any carried down by alumina, or any other metallic oxide. Dr. Müller made two combustions of rosolic acid, which yielded results that agree with the formula $C_{23}H_{22}O_4$. I and Mr. Duppa, when investigating some of the derivatives of acetic acid, found that when phenic and bromazetic acids were heated together at 120 centigrade, two products were formed, one possessing all the properties of rosolic acid, while the other had the character of brunolic acid. We also found that a mixture of iodine and carbolic acid, when heated with formic, acetic, butyric, or valerianic acids, produce rosolic acids, or a similar substance. A mixture of carbolic acid and iodine did not give a similar result; but a black solid, containing iodine. Rosolic acid has lately been prepared on a large scale, and employed for the purpose of printing muslins. I believe it was a rosolate of magnesium that was employed for this purpose.

I do not think it is now used, having been replaced by the more beautiful colouring matter, fuchsine. It was fixed by means of albumen.

The Colouring Matters of Quinoline or Chinoline.—Chinoline is found associated with lepidine, cryptidine, and other of the higher nitrile bases, in the basic oils obtained from coal-tar, and also in the products obtained by distilling cinchonine with caustic alkalies. It was previously termed leucoline or quinoline; but the substance described under these two names was found to contain three or more distinct bases. These have been studied by C. Greville Williams, who has applied the name chinoline to the product which forms the principal part of the impure substance originally termed quinoline. The substance used for the production of colouring matters need not be pure chinoline, as that product originally termed quinoline is of sufficient purity for this purpose. Cinchonine appears to be the best source of chinoline, yielding, when distilled with excess of caustic alkali, 65 per cent. of this body sufficiently pure for manufacturing purposes. Chinoline yields three colouring matters—a violet, a blue, and a green. The following is an account of their preparation by C. Greville Williams:—

"In order to procure the blue colour, one part by weight of chinoline is to be boiled for ten minutes with one part and a half of iodide of amyle. The mixture, from being straw-coloured, becomes deep reddish-brown, and solidifies, on cooling, to a mass of crystals. This product of the reaction is to be boiled for ten minutes with about six parts of water, and, when dissolved, filtered through paper. The filtered liquid is to be gently boiled in an enamelled iron pan over a small fire, and excess of ammonia gradually added. The ebullition may be prolonged with advantage for one hour, the evaporation of the liquid being compensated for by the gradual addition of weak solution of ammonia. The latter may be prepared by the admixture of equal volumes of ammonia, of the density of 0·880, and distilled water. The hour having elapsed, the whole is allowed to cool, when the colour will almost entirely have precipitated, leaving the supernatant liquid nearly colourless. On pouring the fluid away (preferably through a filter, in order to retain floating particles of colour), the dish will be found to contain resinous-looking masses, which dissolve readily in alcohol, yielding a rich purplish-blue solution, which may be filtered and kept for use.

"The colour prepared as above is, as has been said, of a purplish tint; but, if a purer blue be required, the following modification is to be resorted to. The filtered aqueous solution of hydriodate of amyle-chinoline, is as before, to be brought to the boiling temperature; but, instead of adding ammonia, a solution of caustic potash containing about one-fifth of its weight of solid potash is to be substituted. The addition is to be continued at intervals until three-fourths as much potash has been added as is equivalent to the iodine in the iodide of amyle used. The fluid may, after a quarter of an hour's ebullition, be filtered to separate the resinous colour. The product is a gorgeous blue with scarcely any shade of red. On adding the other fourth of potash to the filtrate while gently boiling, a black mass will be precipitated containing all the red, which otherwise would have been mixed with the blue. This mass dissolves readily in alcohol, yielding a rich purple solution, containing, however, an excess of red. The alcholic solution, on filtration, leaves on the filter a dark mass soluble in benzole, and as sometimes prepared, affording a brilliant emerald-green solution of great beauty. It is not always easy to obtain this green colour."

The properties of chinoline violet, and chinoline blue are, as far as I have been able to ascertain, identical. They are resinous substances which present a coppery appearance by reflected light; but, when in very thin layers, appear of a violet or blue colour by transmitted light. They are bases, and dissolved in acids, forming pale-red solutions, which ammonia restores to their original colours. They are slightly soluble in hot water. Tannin precipitates them from their aqueous solution, apparently forming an insoluble compound. Reducing agents do not affect their shade of colour.

Of chinoline green, I know but little. Greville Williams describes it as having a brilliant emerald-green colour of great beauty. I have observed that, when chlorine is passed through an alcoholic solution of chinoline blue, it changes into green; but whether this is the green spoken of by Williams, I am unable to state.

Naphthaline Colours.—The beautiful hydrocarbon, naphthaline, which has yielded such a long category of substances to the chemist, up to the present time has yielded nothing of practical importance to the dyer. From it the following coloured derivatives have been obtained—namely, chloroxynaphthalic acid, perchloroxynaphthalic acid, carminaphta, ninaphthalamine, nitrosonaphthaline, and naphthamein.

Chloroxynaphthalic and Perchloroxynaphthalic Acids.—These acids were discovered by Laurent. They are produced by digesting their chlorides—namely, the chloride of chloroxynaphthyle and the chloride of perchloroxynaphthyle—with an alcoholic solution of hydrate of potassium. They appear to be very difficult substances to obtain in quantity. I have not obtained satisfactory results when endeavouring to prepare them. They have the formula C_{10} (H_5 Cl) O_3, and C_{10} (H Cl_5) O_3, respectively. They are regarded with great interest, as being very closely allied with alizarine, the colouring matter of madder; in fact, they are viewed as chloralizaric acid. That hypothesis is based upon the idea of alizarine having the formula C_{10} H_6 O_3; but it happens, very unfortunately for this theory, that the formula of alizarine itself is still a disputed point. Chloroxynaphthalic acid is of a yellow colour. It is insoluble in water, and difficultly soluble in boiling alcohol and ether; but it dissolves in concentrated sulphuric acid. This acid is a very sensitive test for alkalies, being changed to an orange-red by them. This may be shown by moistening paper with a weak alcoholic solution of this acid, drying it, and then exposing it to ammoniacal vapours. This will cause it to assume a red colour.

The chloroxynaphthalates are described as possessing great beauty, and are of yellow, orange, or crimson colours. The potassium salt is of a red crimson colour, and slightly soluble in water; the barium salt crystallizes in silky needles, having a golden reflection. The strontium, calcium, aluminum, and lead salts are of an orange colour; the cadmium salt is a vermilion-coloured precipitate; the copper and cobalt salts are crimson; and the mercury salt is of a red-brown colour. I once dyed some silk with a small quantity of chloroxinaphthalate of ammonium, which I prepared, and found it to produce a good golden-yellow colour, of great stability under the influence of light. Perchloroxynaphthalic acid is a yellow, crystalline body, insoluble in water, but soluble in alcohol and ether. With potash or ammonium, it forms insoluble salts of red or crimson colour, of great beauty.

Carminaphtha.—This colouring matter was also discovered by Laurent. It is obtained by heating naphthaline with a solution of bichromate of potassium, and then adding sulphuric or hydrochloric acid. It is described as a fine red substance, soluble in alkalies, but precipitated from its alkaline solutions by means of acids. I have never obtained this product when oxidizing naphthaline.

Ninaphthalamine.—Ninaphthalamine is a name which has been given to a remarkable base which was noticed by Laurent and Zinin; but nothing was known of its nature until re-subjected to investigation by Mr. Wood, who has both described and analyzed it, and some of its salts. Its formula is $C_{10}(H_8NO)N$, or naphthalamine, in which H is replaced by NO. Mr. Wood prepares this base in the following manner:—Sulphuretted hydrogen is to be passed through a boiling solution of dinitronaphthaline in weak alcoholic ammonia until nearly all the alcohol has distilled off, which operation should occupy two or three hours. The residue is then to be boiled with dilute sulphuric acid, and filtered. The filtrate, on cooling, deposits an impure sulphate of ninaphthalamine in the form of brownish crystals, which are purified by recrystallization in water two or three times. I have found when crystallizing this salt, that it is best to use water acidulated with sulphuric acid. When pure, this sulphate has to be decomposed with ammonia, and the resulting precipitate of ninaphthalamine washed with water. Thus obtained, ninaphthalamine appears as a bright red-coloured crystalline precipitate, which, when viewed under a lens, appears as beautiful needles. It is very soluble in alcohol, producing a solution, which, when dilute, is of an orange colour slightly tinged with brown, not nearly so pure in colour as that of nitrophenylenediamine. It is slightly soluble in water, and possesses the power of dyeing silk with a colour somewhat similar to that of ordinary annata. With acids, it produces colourless salts. Its formula is the same as that of nitroso-naphthaline, though it possesses very different properties. As a dyeing agent, I do not think it would be of any value, even if it could be obtained cheaply.

Nitroso-naphthaline.—This peculiar body is a product of the action of nitrous acid on naphthalamine. It is prepared by mixing a solution of hydrochlorate of naphthalamine with nitrate of potassium. From this mixture it separates as a reddish-brown precipitate. This, when washed with water on a filter and then dried, is dissolved in alcohol, filtered, and evaporated to dryness on the water-bath. Thus prepared, it is a crystalline, dark-coloured substance, having a greenish-metallic reflection. It is soluble in alcohol, and also in benzole, forming orange-red solutions. When acids are added to an alcoholic solution of nitroso-naphthaline, it immediately assumes a most beautiful violet colour, as fine as any aniline purple. Alkalies restore it to its original colour. Silk may be dyed a beautiful purple shade with this substance, provided a certain quantity of hydrochloric acid, or sulphuric acid, be present. But what is most unfortunate is, that when the silk thus died is rinsed in water, the colour immediately passes back to that of the pure nitroso-naphthaline, and also that the amount of acid required to keep up the purple shade, if left in the silk, rots it in a few days. Could this purple be fixed, nitroso-naphthaline would be a cheap and most useful dye. I have endeavoured to produce the sulpho-acid of nitroso-naphthaline, thinking that if such a compound could be obtained, it would possess a purple colour because it would be an acid itself. But, although sulphuric acid does dissolve it, forming a blue solution, yet no combination takes place. I also endeavoured to produce this desired result by treating sulpho-naphthalamic acid with nitrous acid, but obtained only nitroso-naphthaline, the acid of the sulpho-naphthalamic acid having, apparently, separated.

Naphthamein.—Piria observed that naphthalamine and its salts produced blue precipitates, afterwards becoming purple, when brought in contact with perchloride of iron, terchloride of gold, nitrate of silver, and other oxidizing agents. This product of oxidation, he terms naphthamein. It is prepared by adding a solution of perchloride of iron to a solution of hydrochlorate of naphthamein. This mixture gradually changes and becomes blue, and after the lapse of a short time deposits a blue precipitate. This, when separated by means of a filter, is washed with water, which causes it to change in colour until of a reddish-brown purple. The filtrate from this substance contains protochloride of iron, and, according to Piria, chloride of ammonium. Naphthamein, when heated, fuses and decomposes, leaving a residue of charcoal behind. It is insoluble in water, sparingly soluble in alcohol, but more soluble in ether. It forms a blue solution with concentrated sulphuric acid, and is reprecipitated from it by water. It dissolves in concentrated acetic acid with a purple colour, and is not precipitated from this solution by means of water. Silk and cotton may be dyed with it, but the colour of this compound is so inferior as to render it useless as a dyeing agent.

Tar Red.—This colouring matter was discovered by Mr. Clift, of Manchester, in 1853. It is obtained by exposing a mixture of the more volatile parts of the basic oils of coal-tar and hypochlorite of calcium to the air for about three weeks. Of the pure colouring matter I know nothing, except that, with tannin, it forms an insoluble, or difficultly-soluble, substance. With different mordants, it yields different colours. It seems probable that this colouring matter is derived from pyrrole.

Azuline.—This substance, which is a beautiful blue dye, has been introduced within the last six months. It was discovered by MM. Guinon, Marnas, and Bonney, of Lyons, who keep the process for its preparation a secret. It is obtained from coal-tar, but from which of its numerous derivatives is not known. This colouring matter is a brittle, uncrystallizable body, possessing a coppery, metallic reflection. It is very difficultly soluble in water, but soluble in alcohol, producing a magnificent blue solution, having but a slight tinge of red. With concentrated sulphuric acid it forms a blood-red liquid, which, when poured into an excess of water, precipitates the colouring matter unchanged. Dilute acids have no effect upon azuline. Its alcoholic solution, when mixed with an alcoholic solution of hydrate of potassium, also changes to a dull-red colour. This, when diluted with water, forms a purple liquid, which is gradually restored to its original blue colour by hydrochloric acid. With excess of ammonia, the solutions of azuline change to a reddish-purple colour. This ammoniacal solution, when treated with sulphide of ammonium, gradually assumes a dull, yellowish-brown colour. Iodine destroys the colour of azuline. In colour, it is not quite so fine as chinoline blue, though far superior to Prussian blue.

Application of Coal-tar Colours to the Arts of Dyeing and Calico-Printing.—I cannot enter fully into this subject, because, not being a practical dyer or printer, I do not feel sufficiently acquainted with the various operations of the dye-house or print-works to do so; and also because the technical details of dyeing and printing operations would not, I think, interest the society. I therefore propose to speak of the different processes employed for dyeing and printing with coal-tar colours, in general terms only.

Dyeing Silk and Wool.—Silk and wool can be dyed with all the coal-tar colours, with the exception of rosolates, these fibres possessing, in most cases, a remarkable affinity, if I may so speak, for these colouring matters. Many of them—as aniline purple, and violine—are taken from their aqueous solutions so perfectly by these substances that the water in which they have been dissolved is left colourless; in fact, silk and wool take them up so rapidly that one of the great difficulties the dyer has to contend with is to get the fibres dyed evenly.

To Dye Silk with Aniline, Purple, Violine, and Roseine.—One process is applicable for dyeing silk with either of these colouring matters, and it is a very simple one. An alcoholic solution of the colouring matter required is to be mixed with about eight times its bulk of hot water previously acidulated with tartaric acid, and then poured into the dye-bath, which consists of cold water slightly acidulated. After being well mixed, the silk is to be worked in it until of the required shade. If a bluer shade than that

of the colouring matter is required, a little solution of sulpho-indigotic acid may be added to the dye-bath, or the silk may previously be dyed blue with Prussian blue, or any other blue, and then worked in the dye-bath.

To Dye Silk with Fuchsine, Picric Acid, Chinoline Blue, and Chinoline Violet.—This process is still more simple than the above, as it is simply necessary to work the silk in cold aqueous solutions of these colouring matters. With fuchsine or picric acid, a little acetic acid may be used; but with chinoline colours, acids must be avoided. With picric acid, a very clear green colour may be obtained by adding a little sulpho-indigotic acid to the dye-bath. I may mention that violine is not of such a fine colour as that produced by aniline purple and indigo blue; and also that rosine is not such a good colour as fuchsine or magenta.

To Dye Silk with Azuline.—The dyeing of silk with this colonring matter is far more difficult than with the preceding, requiring to go through two or three different processes. This difficulty, I believe, arises from the insolubility of azuline in water. The process generally employed is to work the silk in a solution of the colouring matter acidulated with sulphuric acid; and, when of a sufficient depth, to raise the temperature of the dye-bath to the boiling-point, and work the silk in it again. After this, the silk is well rinsed in water until free from acid, and worked in a bath of soap lather. It is then again rinsed and finished in a dilute acid bath.

To Dye Wool with Aniline Purple, Violine, Roseine, Fuchsine, and Chinoline Colours.—This operation is generally conducted at a temperature of 50 or 90 centigrade, and the dye-bath is composed of nothing but a dilute aqueous solution of the colouring matter required. Acids should be avoided, or only a very small quantity used, as the resulting colours are not so fine when they are employed.

Methods of Dyeing Cotton with Coal-Tar Colours.—When aniline purple was first introduced, considerable difficulty was experienced in dyeing cotton so as to obtain a colour that would resist the action of soap. Aniline purple is absorbed by vegetable fibres to a certain extent, and very beautiful colours may be obtained by simply working cotton in its aqueous solution; but when thus dyed the colours will not stand the action of soap. I have tried the use of tin and other mordants, but without any satisfactory result.

In 1857, Mr. Puller, of Perth, and myself simultaneously discovered a process by which this colouring matter could be fixed upon vegetable fibres so as to resist the action of soap. This process is based upon the formation of an insoluble compound of the colouring matter with tanning and a metallic base in the fibre. To effect this, the cotton has to be soaked in a decoction of sumac, galls, or any other substance rich in tannin, for an hour or two, and then passed into a weak solution of stannate of sodium, and worked in it for about an hour. It is then wrung out, turned in a dilute acid liquor, and then rinsed in water. Cotton thus prepared is of a pale-yellow colour, and has a remarkable power of combining with aniline purple.

The above process may be modified: for example, the stannate of sodium may be applied to the cotton before the tannin, and alum may also be used in the place of stannate of sodium. To dye this prepared cotton with aniline purple, it is only necessary to work it in an acidulated solution of the colouring matter; and, when thus prepared, the cotton will absorb all the colouring matter of the dye-bath, leaving the water perfectly colourless. It has been found that cotton thus prepared can be dyed with any colouring matter that forms insoluble compounds with tanning; therefore, it is used for dyeing with rosine, violine, fuchsine, und chinoline colours.

Cotton may also be dyed a very good and fast colour by mordanting it with a basic lead salt, and then working it in hot solution of soap, to which aniline purple has been added. Oiled cotton, such as is used for dyeing with madder, is also used in dyeing these colours. Cotton simply oiled, and before mordanted with alum and galls, also combines readily with these colouring matters; but, as the colour of the prepared cotton is generally rather yellow, it interferes sometimes with the beauty of the result. Cotton is sometimes coated with albumen, which is coagulated by the action of steam, and the albumen which covers the cotton dyed in the usual manner. I may mention that violine, rosine, fuchsine, and also the chinoline colours combine with unmordanted vegetable fibres, as well as aniline purple. Picric and rosolic acids are not applicable for dyeing cotton.

Printing Calico with Coal-Tar Colours.—The process generally employed for printing with these colouring matters is simply to mix the colouring matters with albumen or lacterine, print the mixture on the fibre, and then to coagulate the albumen or lacterine by the agency of steam. I and Mr. Gray, of the Dalmonach Print-Works, discovered the first process of applying these substances to fabrics in a different manner to the above. It consisted in forming a basic carbonate or an oxide of lead on those parts of the cloth which were to be coloured, and then working the cloth thus prepared in a hot lather containing the colouring matter. Where the cloth was mordanted with the lead compound, colouring matter was absorbed; but, when unmordanted, it was left white, because pure cotton is not dyed with these colouring matters in the presence of soap. This process was intended for the application of aniline purple, for at the period of this discovery the other coal-tar colours were unknown. Colours dyed by this process were very pure, but it had many disadvantages, which have caused it to be disused. Lately the process previously described for dyeing colours upon cotton prepared with tannin has been applied to calico-printing. It consists in printing tannin upon the fabric previously prepared with stannate of sodium, and then dyeing it in a hot dilute acid solution of the colouring matter. By this means, the parts of the fabric which are covered with tannin are dyed a deep colour, but the other parts are only slightly coloured. These are cleared by means of well-known processes. This method of applying these colouring matters is also modified by printing a compound of the colouring matter required, and tannin on the prepared cloth, instead of tannin only, and then steaming the goods.

Method of Applying Aniline Green to Fabrics.—This process is interesting, as being the first example of the production of coal-tar colours on the fabric itself. It was proposed by Professor Calvert. His process is very simple. The design is to be printed on the cloth with a thickened solution of chlorate of potassium, dried, passed through a solution of an aniline salt, again dried, and allowed to hang in a moist atmosphere. In the course of two or three days, the colour will be fully developed. The colour thus produced may be changed into a dark blue by the agency of soap or an alkaline liquid. This process is very inexpensive, the amount of aniline required being very small.

Application of Nitrosonaphthaline.—If cloth is printed with a thickened solution of a salt of naphthalamine, dried, and then passed through a solution of nitrate of potassium, nitrosonaphthaline will rapidly make its appearance as a reddish-orange colour; but, unfortunately, the colour thus obtained will not resist the action of soap well.

Of the numerous colouring matters of which I have briefly spoken, there are only four that are at present employed by the dyer and printer, namely, aniline purple, fuchsine, picric acid, and azuline; but I think it probable that others of them will soon be introduced, such as the bleu de Paris; and nitrophenylene diamine might be used for silk-dyeing, as its colour is good, and it stands the action of light well. Unfortunately, the chinoline colours, though very beautiful, are most fugitive. There has been an endeavour to introduce the chinoline blue of late; but, although a considerable quantity of silk was dyed with it at first, it is now scarcely used, because, when exposed to the sun for two or three hours, the dyed silk becomes bleached. Aniline purple resists the light best. Fuchsine and alpha aniline purple soon fade, especially when on cotton. Azuline and bleu de Paris are not easily acted upon by light when on silk.

When the colouring matters of coal-tar were first introduced, there was a great fear that the workmen engaged in their manufacture would suffer in health. All I can say is that, during the few years I have had to do with this branch of manufacture, there has not been a single case of illness among the workmen that has been produced by any operations carried on for the production of aniline purple.

DR. J. NORTHCOTE VINEN'S FORTNIGHTLY REPORT ON THE GAS SUPPLIED BY THE SURREY CONSUMERS COMPANY.—

Week ending. 1861.	Number of Observations.	Maximum Light. Candles.	Minimum Light. Candles.	Average Light. Candles.
June 22	4	13·69	12·74	13·14
,, 29	4	14·62	13·04	13·73

The volume of hydrocarbons averaged 4 per cent.—carbonic acid, ·75 per cent. There was no sulphuretted hydrogen. Ammonia was present on June 18, 21, 24, and 28. The maximum pressure was 2 inches and 5/10ths; the minimum, 2/10ths. The ordinary working pressure averaged 5/10ths of an inch.

EDINBURGH GAS COMPANY.—The following is an extract from the report presented at the general meeting of this company, held in Edinburgh on the 17th inst.:—"The directors continue to make such improvements and extensions on the works and mains as the interests of the company demand, and they are anxious to maintain the works and machinery in a state of very great efficiency, so as their productive and distributive power may be fully equal to that of any works which can be constructed now for the same amount of capital as has been expended on them. The directors have always studied to give every possible advantage to the public in the use of gas, in proof of which the price has been reduced by them, at thirteen different times since the year 1829, from 12s. per 1000 cubic to 5s. 5d.—the price to which, in the report last year, they stated it had been reduced as from May 1859. They have now to report that, some time since, they resolved to make a further reduction from Whit-Sunday, 1851, that being the most suitable period as regards the company's financial year, and this resolution has accordingly been carried into effect by a reduction to 4s. 10d. per 1000 cubic feet. The directors deem it important that the shareholders should distinctly understand their true position with the public on this point, and should be made fully aware that the subject of reducing the price had been repeatedly discussed by the directors, and finally resolved upon by them, some months since, before the present movement for cheap gas. It cannot be too strongly impressed on the shareholders and on the public, that the gas supplied by this company is of the purest quality, and of the highest illuminating power, and that this regulates the price. It would, however, be easy to produce from cheaper coals inferior gas, and to sell it at a low nominal price; but the cost to the consumer for equal quantities of light would, notwithstanding, be greater. For instance, 20-candle gas, which is sold in London at 6s. per 1000 cubic feet, would be no cheaper at 3s. 6d. per 1000 cubic feet, than 28-candle gas, the quality supplied by this company at 4s. 10d.; and 14-candle gas, a higher quality than is generally supplied throughout England, and which is sold in London at 4s. and 4s. 6d., would, even at 2s. 5d. per 1000 feet, be no cheaper to the consumer than this company's gas at 4s. 10d. All this is matter of simple calculation. The consumer would, besides, be subjected to the inconvenience arising from the increase of the products of combustion, and the great additional heat evolved by the consumption of a greater volume of gas, an inconvenience which limits, and in many cases precludes, the use of gas in private houses. Parrot-coal can be got from many different sources, and at prices varying from 10s. to 25s. per ton, the prices being regulated simply by the comparative value of the products obtained after deducting the cost of distillation. Some of the qualities are so inferior as to be little used, while the demand for the best qualities greatly exceeds the supply. The price at which gas can be supplied to the public with a remunerating profit depends greatly on the extent of the demand. If in a large manufacturing town, double the quantity of gas is made to pass through the same mileage of mains laid down in another town where the company is entirely, or almost entirely, dependent on private consumers, it is obvious that the gas can be supplied in the former place at a lower price with a larger profit than it can be in the latter. Accordingly, your directors have uniformly, as the consumption increased in Edinburgh, given the benefit of it to the public by lowering the price of gas, not by increasing the profits; and they have only to add that, so soon as by the increased support of the public, combined with a reduction in the price of coals, and other expenses, they shall be enabled to reduce the price still further consistently with supplying gas of the best quality, they will have much pleasure in doing so."

DUNFERMLINE GASLIGHT COMPANY.—The Annual General Meeting of the Dunfermline Gaslight Company was held in the Town-House on the 26th ult.—Mr. David Laurie in the chair. The minutes of the last meeting having been read and approved, the following report from the directors was also read:—"The directors, in presenting their report for the past year, are glad to inform the shareholders that the affairs of the company continue prosperous. The chemical works erected two years ago, and noticed in former reports, have proved a complete success; and the directors recommend a dividend of 5s. per share out of the profits of these works. As the consumption of gas has greatly increased since the price was last lowered, the directors would recommend that the price per 1000 cubic feet should be reduced from 5s. to 4s. 7d. for the year 1861-62. The directors have found itnecessary to erect additional accommodation for the company's business. It consists of a public office and a room for the directors, and also of a shed for the storeage of coals. The expense, in all, will amount to about £300. The directors recommend that a dividend of 20s. per share be declared, payable, as usual, at the British Linen Company's Bank, on and after Monday, the 1st of July, 1861. Nine directors fall to be elected at the present meeting. The three ineligible for election are—Messrs. Kilgour, Reid, and Sanders." The report was unanimously adopted. On the motion of the Rev. Dr. Chalmers, seconded by Mr. Inglis, the following gentlemen were appointed directors for the year:—Messrs. John M'Donald, George Wilson, James Kerr, David Russell, Walter Watson, David Laurie, Thomas Alexander, John Davie, James Morris, Mr. Laurie, chairman, and Mr. Robert Gray, manager. A vote of thanks was then tendered to the chairman for presiding, and the proceedings terminated.

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CASTINGS, per Ton.

Average Weight of Cast-Iron Gas-Pipes, per Yard.

1¼ in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lbs.

Retail Prices are 5 to 10 per cent. higher.	London.	Glasgow.	Newcastle.	Wales.	Yorkshire, Derbyshire, and Staffordsh.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Pig Iron, No. 1	3 5 0	2 10 0	2 12 6	3 0 0	3 5 0
1¼ and 2 inches Socket-Pipes	7 0 0	6 0 0	6 5 0	6 10 0	6 15 0
2½ and 3 ,, ,,	6 10 0	5 10 0	5 15 0	6 0 0	6 5 0
4 and 5 ,, ,,	6 0 0	5 0 0	5 5 0	5 10 0	5 15 0
6 in. and upwards ,,	5 15 0	4 15 0	5 0 0	5 5 0	5 10 0
Retorts, 1st fusion, hot blast	5 10 0	4 10 0	4 15 0	5 0 0	5 5 0
,, 2nd ,, cold ,,	6 10 0	5 5 0	5 10 0	6 0 0	6 5 0
Tank Plates, ⅜ thick and above	6 0 0	5 0 0	5 5 0	5 10 0	5 10 0

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	2 in.	1½ in.	1¼ in.	1 in.	¾ in.	½ in.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Patent Welded Tubes, from 2 to 12 ft., perft.	1 8	1 0	0 10	0 7	0 5	0 4½
,, ,, ,, 6 in. to 18 in., each	3 0	2 0	1 9	1 3	1 0	0 9
Connecting-Pieces, or Long Screws	3 6	2 3	2 0	1 6	1 2	0 11
Bends, Springs, and Elbows—wrought iron	3 9	2 3	1 9	1 0	0 10	0 8
Tees, wrought or cast	4 0	2 6	2 0	1 6	1 1	0 10
Crosses, wrought or cast	4 6	3 0	2 6	2 0	1 6	1 2
Iron Cocks	17 6	9 6	7 6	4 6	3 3	2 6
,, with brass plug	28 0	16 0	13 0	7 0	5 6	4 6
Diminishing Sockets, Caps, Plugs, and [Nipples	1 3	0 9	0 8	0 6	0 5	0 4
Plain Sockets	1 0	0 8	0 7	0 5	0 4	0 3
Syphons, 2 quart	15 0	14 0	13 6	13 0	12 0	—

COALS, per Ton.

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Whitwell Primrose	6s. 9d.	Boghead, at Leith	45s. 0d.
Medomsley, Eighton Moor, and Burnhope	7 0	Kirkness, best	23 0
Pelaw	7 3	Capeldrae, 1st quality	20 0
New Pelton, Peareth, South Pelaw, Washington Hutton, and South Peareth	7 6	,, 2nd ,,	12 6
Pelton	7 9	Lesmahago, at Glasgow	25 0
Ramsay's Newcastle Cannel	16 0	,, ,, Leith	27 6
		Arniston	27 6
		Wemyss	20 0
		Knightswood	18 0
		Pirnie	12 0

FREIGHTS.

Coastwise—Newcastle.—Per Ton.		*Foreign.—Per Keel.*	
Chatham & Rochester	6s. 0d.	Boulogne and Calais	£8 0s.
Cork	16 6	Barcelona	25 0
Dover	6 6	Bordeaux	14 0
Dublin	10 6	Cadiz	18 10
Exeter Quay	9 0	Copenhagen	9 10
Folkestone	6 6	Genoa	23 10
London (Pool)	6 0	Hamburg	8 0
Lowestoft & Yarmouth	5 0	Havre	10 0
Lynn	—	Leghorn	21 10
Portsmouth	7 6	Lisbon	15 0
Plymouth	8 6	Riga	7 10
Ramsgate & Margate	6 6	Rotterdam	8 0
Whitstable	6 9	Stettin	10 5
Weymouth	8 0	Trieste & Venice	£23 to 26 0

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English Pig Lead ... ,,	20 0	English Block Tin ... ,,	125 0 0
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W. and G. would respectfully call the attention of Gas Engineers and Managers to their Station-meters, having made and erected the largest in use at the present time, two of which may be seen at the Stockport and Liverpool Gas Works, on application to the respective Engineers.

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OFFICE for the Procuration of LETTERS PATENT, and the REGISTRATION of DESIGNS. JOSEPH WILLCOCK and CO., Patent Agents and Engineers, Successors to Messrs. Barlow and Co., 89, Chancery Lane, LONDON, W.C.
GRATIS, and post free, "THE INVENTOR'S MANUAL;" also a pamphlet, "*L'Obtention de Patentes Anglaises;*" 500 MECHANICAL MOVEMENTS; the first part of Kinematics, or the Transformation of Motion. By JOSEPH WILLCOCK, C.E., Mem. Soc. of Eng. May be had at the above address, and of any Bookseller. Price 2s. 6d. The second part is approaching completion, and will shortly be announced.

WILLIAM RICHARDSON
(LATE OF DUDLEY),
CONSULTING ENGINEER,
PATENTEE OF THE VERTICAL OVEN RETORT
No. 357, PERSHORE ROAD,
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WILLIAM BLEWS AND SONS'
IMPROVED MACHINE-MADE BURNERS
WROUGHT-IRON BATSWINGS,
FOR RAILWAY STATIONS AND MARKETS,
GAS-FITTINGS, CHANDELIERS,
BRASS AND IRON TUBES OF EVERY KIND
SUPPLIED ON THE BEST TERMS,
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A large stock of Fire-Clay Goods always on hand in London, at the lowest wharf prices, at Messrs CHRISTIE & Co.'s Wharf, 54, Bankside, SOUTHWARK.

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Retort Mouthpieces, Bolts, Nuts, and every description of Wrought-Iron Work.

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FIRE-BRICKS, TILES, BLOCKS, AND CHIMNEY-TOPS.

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FIRE BRICKS OF EVERY DESCRIPTION, SHAPE, AND SIZE, &c. &c.
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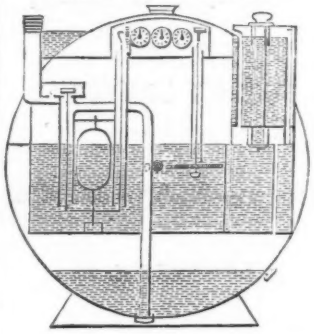
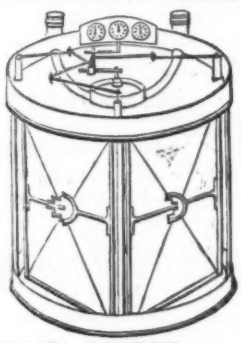
These RETORTS are generally used in the Gas-works of Preston, Accrington, Bury, Heywood, Middleton, Rochdale, Ratcliffe; the Mills of Messrs. Horrocks, Miller, and Co., Preston, &c. &c., and are unequalled in having afforded general satisfaction to those who have given these Retorts a trial.
To meet the increasing demand, the Works at Little Harwood have been greatly enlarged; and Gas Engineers who may favour with an Order may rely with confidence on their being promptly supplied with an article not to be surpassed in finish or durability.
PRICES MODERATE.

PATENT WET METER.



N. DEFRIES,
CONSULTING GAS ENGINEER,
Inventor and Patentee
OF
WET GAS-METERS,
WITH SELF-ADJUSTING WATER-LINE;
DRY METERS,
GAS-HEATING BATHS, OVENS, STOVES,
GAS FIRES with INDESTRUCTIBLE FUEL,
&c., &c.

PATENT DRY METER.



FACTORY: DIANA PLACE, FITZROY SQUARE. OFFICE: 406, EUSTON ROAD, LONDON,
Eight Doors from Factory.

Attempts having been made to construct Self-Supplying Apparatus to Wet Gas-Meters upon the Bird Fountain principle,—which, although unerring to supply water in the open atmosphere, has not wholly succeeded so as to be relied upon when enclosed in a Gas-tight Meter Case,—N. DEFRIES begs leave most respectfully to acquaint Gas Companies, and the Public in general, that he has constructed his PATENT WET GAS-METER upon a method entirely different, being founded on the well-known principle of the self-acting supply of the Oil Lamp, which has never been applied for the adjustment of the Meter Water-Line before, and which, by the admission of external air to a chamber sealed from Gas, will never fail to faithfully perform its required function. They are of the very best materials and workmanship, will stand more pressure than is required as the test for soundness by the New Act, are guaranteed to prevent surreptitious burning without detection, and will be kept in repair free of charge for seven years.

N. DEFRIES'S CELEBRATED DRY METERS,

of which more than 80,000 are in use in Palaces, Churches, Chapels, Royal Dockyards, Club Houses, Public Offices, and other Buildings throughout the Empire and Continent, which have done so much in checking surreptitious burning, and simplified the fitting up of Gas.
To remove any doubt of accuracy of measurement his Meter for 1500 lights, in use upwards of ten years at the Royal Italian Opera, until that Building was destroyed by Fire, was long afterwards dug out of the burnt ruins, then tested by the Chartered Gas Company in the presence of George Lowe, Esq., F.R.S., and other Chief Officers, and found inflexibly correct. Also, on the 9th of June, 1858, at the Western Gas-Works, his Meter for 150 lights, after considerable use, was doubted, and subjected to the most variable tests—from the full lighting to a single Jet—and in each case, as in other instances, accuracy was finely indicated.
As to durability, his two large Meters at the Thames Tunnel have been in use night and day for upwards of twelve years—one continuation of dark hours—subjected to the wear and tear of seventy-five years as compared with the ordinary business hours of using Gas above ground.

LORD REDESDALE'S SALE OF GAS BILL.

All Meters constructed by N. DEFRIES are guaranteed to pass the Provisions of the Standard.

No alteration has been necessary in the Meters he continues to supply to the Chartered, Imperial, City of London, Equitable, and other large Companies, his accustomed range of 1 per cent. over and under meeting all the desired requirements; whereas, by the New Act, a greater departure from accuracy—viz., 2 per cent. fast to 3 per cent. slow—is permitted.

TRUSS'S PATENT ELASTIC PIPE-JOINT,

FOR GAS AND WATER-MAINS, AND STEAM PIPING,

Is the only PERFECT joint that has ever been constructed, and supplies the long-felt desideratum, by allowing for the expansion and contraction of metals, and for oscillation and deflection, without impairing the joint. Gas Companies will effect an incalculable saving in adopting it, as compared with the present imperfect mode of jointing.

Drawings, Estimates, and every particular, furnished on application to

THOMAS SEAVILLE TRUSS, C.E., 53, GRACECHURCH STREET, LONDON, E.C.

R. LAIDLAW & SON,

GAS ENGINEERS, IRON & BRASS FOUNDERS,

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GLASGOW;

AND AT SIMON SQUARE, EDINBURGH;

MANUFACTURERS OF

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WROUGHT-IRON TUBES, FOR GAS, WATER, & STEAM; CAST-IRON RETORTS & PIPES;

HYDRAULIC MAINS, CONDENSERS, WASHERS, SCRUBBERS, PURIFIERS, & TANKS.

GASHOLDERS;

GOVERNORS, SLIDE-VALVES, &c.;

WROUGHT & CAST IRON ROOFS & HOUSES.

Contractors for Gas-Works of any Magnitude. *Plans, Specifications, and Estimates furnished.*

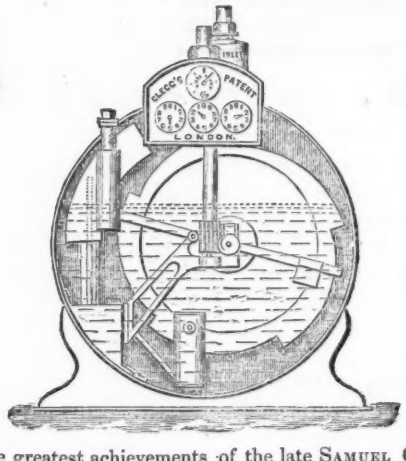
CLEGG'S
NEW PATENT HYDRAULIC GAS-METER.

BISCHOFF, BROWN, & CO.,

MANUFACTURERS

AND

SOLE LICENSEES,



LANGHAM WORKS,

GEORGE STREET,

GREAT PORTLAND STREET,

LONDON, W.

This Meter is the last and one of the greatest achievements of the late SAMUEL CLEGG, C.E., in his connexion with the Manufacture and use of Gas, and, without presumption, it may be confidently affirmed to be the only Meter extant that can be relied upon to measure correctly, to work with the minimum of pressure, and steadiness of light. It cannot be tampered with by tilting or otherwise, and will be of great durability.

This Meter is constructed on an entirely new principle, and, when once adjusted, will always remain the same under all circumstances. The quantity or height of the water in it has no effect on its *capacity*. The immense importance and economy of this to Gas Companies who are obliged to employ so many inspectors, doing their utmost to prevent tampering with the Meters, is so obvious, that they will be able to appreciate its advantages over all other Wet Meters, where the varying height of the water regulates the capacity, and is, in consequence, a perpetual source of annoyance, bad feeling, and litigation, between the Gas Companies and consumers.

The following experiments clearly point out our advantages, and can be readily tested:—

Old Water Meter.

2 pints above the line	..	5 lights	..	13½ per cent. fast.
1 „ „	..	5 „	..	7½ „ „
Water on the line	..	5 „	..	⅛ „ „
1 pint below the line	..	5 „	..	5 „ slow.
1⅛ „ „	..	5 „	..	7½ „ „
1¼ „ „	..	5 „	..	10 „ „

A fluctuation of 23½ per cent.

Clegg's New Patent Hydraulic Gas-Meter.

Water on the line	1 inch pressure	5 lights	½ per cent. slow.
1 pint below	1 „ „	5 „	½ „ „
2 „ „	1 „ „	5 „	½ „ „
2 „ „	1½ „ „	5 „	right
2 „ „	½ „ „	5 „	„

A fluctuation of ⅛ per cent.

The Drum, from its peculiar construction, presents scarcely any resistance when moving through the water; and, its weight being taken off its axis by an air vessel, it revolves with the slightest pressure.

The comparative absence of friction in the Drum reduces the wear and tear, and enables it to be made of the strongest materials, which will keep it in working order longer than any other Meter.

It is approved and adopted by the principal London and Country Gas Companies, and is guaranteed to comply with the "Sale of Gas Act," as this Meter, beyond all doubt, works within a shorter range of registration than any other Meter manufactured.

500
HOLMAN'S PATENT DOUBLE-ACTION PUMPS

Prove their general adaptation. They are adopted by

CIVIL, MARINE, MANUFACTURING, AND MECHANICAL ENGINEERS.

For Pumping TAR, AMMONIACAL LIQUOR, WATER, WORT, and other fluids, their intrinsic excellence is too well known to need description.

S. HOLMAN tenders his hearty thanks to all Patrons, and is prepared to undertake the Supply of Towns, Public and Private Establishments, and Irrigation of Lands, on any scale.

Sole London Agent of the Williams's Perran Foundry Company, for the Sale of Cornish Pumping, Winding, and other Steam-Engines, heavy Machinery, Castings, and Forgings.

London Agent for Tangye's Patent Hydraulic Presses, Jacks, Lifts, Crabs, Cranes, Blocks, &c

ALL KINDS OF HYDRAULIC AND STEAM MACHINERY FOR HOME USE OR EXPORT.

Cornish Boilers of superior construction, Steam-Cocks, Gauges, and Fittings.

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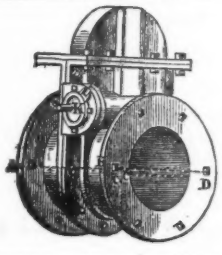


BRYAN DONKIN & CO.

keep always on stock their

IMPROVED GAS VALVES

from 2 inches to 18 inches, price 11s. 6d. to 13s. 6d. per inch diameter

List of prices, with full dimensions of all sizes up to 27 inches, to be had on application.

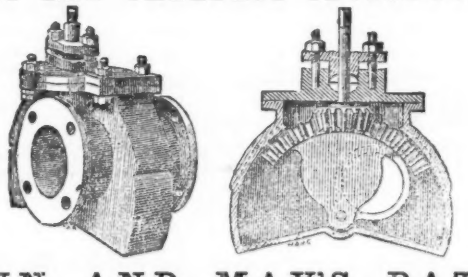
These Valves are all proved to 30 lbs. on the square inch before leaving the works.

BRYAN DONKIN & CO.,

ENGINEERS,

NEAR GRANGE ROAD, BERMONDSEY.

BEST AND CHEAPEST SLUICE-COCK.



BROWN AND MAY'S PATENT.

Above 3-inch diameter, price 10s. per inch. Brass face, 6d. eri nch extra.

Can be taken to pieces without being removed rom the line of Piping.

NORTH WILTS FOUNDRY, DEVIZES.

Wholesale Agents, Messrs. S. and E. RANSOME, 31, Essex Street, Strand, E.C., Where a Sample may be seen.

WALTER FORD,

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PADDON and FORD,

GAS-METER AND APPARATUS WORKS,

GRAY'S INN ROAD, LONDON.

MANUFACTURER OF WET AND DRY GAS-METERS, STATION-METERS, GOVERNORS, &c. &c.

A large number of **STATION-METERS,** up to 80,000 feet per hour (being by far the largest in use), and **GOVERNORS** for **MAINS,** up to 24 inches, have been constructed by Paddon and Ford. These Meters and Governors possess peculiar advantages as regards strength and freedom of action.

Sole Manufacturer of **PADDON'S PATENT STREET-LAMP REGULATORS,** for insuring any required consumption. These Regulators are in general and increasing use, and references can be given to Gas Companies who use them for every Lamp.

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28, BAGNIGGE WELLS ROAD, CLERKENWELL,

PATENTEE OF

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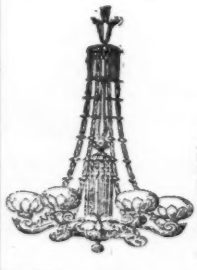
AND

GAS APPARATUS.

All Meters warranted to comply with the Act of Parliament.



F. & C. OSLER,

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Manufactory—Broad Street, Birmingham—Established 1807,

MANUFACTURERS OF GLASS CHANDELIERS, GLASS LUSTRES, TABLE GLASS, &c. &c.

ELEGANT CRYSTAL GLASS CHANDELIERS, for GAS, from £4 upwards (Made from "REGISTERED" DESIGNS), with GLASS BRANCHES, &c.; suitable for DRAWING-ROOMS and BALL-ROOMS. The more extensive use of GAS in private dwellings has induced Messrs. OSLER to direct their particular attention to the manufacture of this class of articles—which, with a view to their general adoption, are offered at very moderate prices. Purchasers can select from a great variety of patterns, to which additions are being constantly made.

THEATRES, CONCERT, ASSEMBLY, AND BALL ROOMS LIGHTED BY ESTIMATE ON THE LOWEST TERMS.

JAMES OAKES and CO.,

ALFRETON IRON WORKS, DERBYSHIRE,

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WENLOCK IRON WHARF, 20, WHARF ROAD, CITY ROAD, LONDON,

Beg to inform Gas and Water Companies and the public, that they keep in stock in London all the CASTINGS in general use in Gas and Water Works, including best cold-blast Iron Retorts, Socket and Flange Pipes of all sizes, Bends, Branches, Syphons, Lamp Columns of various patterns, &c.

N.B.—Orders for Cast-iron Tanks, Girders, Columns, Cylinders, and all irregular castings, will have immediate attention.

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C. H. is prepared to carry out the warming and ventilation of public buildings, &c.; also civil engineering in general.

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Manufactory for every description of Casting and Machinery for Gas Works and Water Works.

Warehouse in London for Cast-iron Pipes and Connections of all sizes and in any quantity, Scott's Wharf, Bankside, Southwark.

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Wrought and Cast Iron Pipes, Cast-Iron Retorts, and all kinds of Foundry Work necessary for Gas-Works. Fire-Bricks and Clay Retorts. Gas Coals of every description. Pig, Bar, and Plate Iron.

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WROUGHT-IRON Guides for Gas-HOLDERS, when Trussed upon scientific principles, are more capable of resisting strains, in every direction, than Cast Columns of any form can be; and weigh only one-fifth as much as the latter. Designs and Working Drawings for Guides and Ties can be obtained of the Inventor, CHARLES DIXON, C.E., Chichester, SUSSEX.

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BEAL, WALKER, and CO., Coal and COKE MERCHANTS, No. 1, Walker's Buildings, SHEFFIELD, beg to inform the Directors and Managers of Gas Companies, that they are in a position to contract for the supply of the different sorts of best Gas Coal, such as best Silkstone, Barnsley, and others, at the lowest prices, which may be had on application at the above Office.

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Mr. PENNY having had a large experience in the construction, alteration, and management of Gas-Works, begs to inform the Directors of Gas Companies that he may be consulted on all matters appertaining thereto. He also manufactures Gasholders, Purifiers, and all the various apparatus used in Gas-Works, and keeps in stock Retorts and Mouthpieces, Socket-Pipes, Bends, Branches, T-pieces, &c. &c.

Plans, Specifications, and Estimates prepared.

Gas Stoves, Gas Baths, Gas Cooking APPARATUS, warranted the best in England, at PHILLIPS'S, the original inventor and manufacturer, and general gas-fitter, &c., 55, Skinner Street, Snow Hill, LONDON, E.C.

PATENT SAFETY ATLAS CHANDELIERS, Sun and Star Burners, Outside Lamps, Patent Reflecting Lamps, Portable Coppers for either Gas or Fuel. Iron Tube and Fittings. Best quality for Gas, Steam, or Hot Water, &c. &c.

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DIRECT-ACTING GAS-EXHAUSTERS,

supplied either with or without Steam-Engines and Boilers.

FOUR-WAY DIAPHRAGM VALVES,

one of which answers the purpose of THREE ordinary Valves, as applied to Purifiers, or in shutting off and passing Station-Meters, Governors, or other apparatus, while the Connecting-Pipes are also much simplified.

RETORT SETTINGS,

designed to be heated by Tar alone, and with a total absence of Smoke.

Illustrated circulars, giving references and every information, may be obtained on application as above.

BENJAMIN GIBBONS, Jun.,
DEEPDALE FIRE-CLAY & BRICK WORKS,
Near DUDLEY,

Manufacturer of every description of Fire-Bricks, Lumps, Quarries, Shields, Flue Covers, &c., to any size or shape required.

FIRE-CLAY RETORTS,

TO MODEL OR DRAWING.

B. G. begs to call the attention of Gas Companies to his Fire-Clay Retorts, which have been used with great satisfaction in some of the largest Gas-Works in the Metropolis and many Provincial Towns in England.

References given, if required.

WILLIAM INGHAM AND SONS,
WORTLEY FIRE-BRICK AND RETORT WORKS,

Near

Leeds.

W. INGHAM and SONS, having for many years been extensively engaged in the Manufacture of
RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY,
beg to call especial attention to their RETORTS, which have for many seasons proved to be unsurpassed in quality by any in the Kingdom, their FREEDOM FROM CRACKS and the ADHESION OF CARBON rendering them worthy the attention of all parties interested in the making of Gas.
The Works are of such magnitude as to ensure the prompt execution of orders to any extent.

Estimates for Setting, or Bricklayers sent when required.

GAS OVENS IN SEGMENTS OF EQUAL QUALITY.

A large stock of Fire-Bricks, Fire-Clay, Terra Cotta, and Drain-Pipes of all sizes kept in London at CHRISTIE & CO.—Wharf, 64, Bankside, Southwark, where all particulars of Prices, &c., may be obtained.

N.B.—*Export orders continue to have prompt attention.*

EDWARD COCKEY AND SONS'
PATENT GAS VALVES.

These Valves are formed of two Cast-Iron Cylinders, with segmental divisions, having the faces ground gas-tight—the upper Cylinder turning horizontally on the lower one.

The lower Cylinder has pipes from each division, communicating with the vessels to and from which the gas is to be passed. The upper Cylinder has corresponding divisions, so arranged as to direct the passage of gas to the different segmental divisions in the lower part, and when it is turned on the face of the lower one, to alter the flow of gas from one vessel to another.

Each Valve has an index-plate provided, which is to be attached to the floor, and a pointer on the cover of the Valve shows which way it is turned. Thus, the Manager of the Works can at once see in which direction the gas is passing.

There are about fifty of these Valves now in use, of sizes varying from two to twelve inches, and they are giving great satisfaction. Amongst the Works at which they are fixed, the following may be mentioned:—

BASINGSTOKE.	CANTERBURY.	FROME.	RYDE.
BLANDFORD.	ENNISCORTHY.	GODALMING.	SANDWICH.
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They are in course of erection at other important Works.

IRON WORKS, FROME SELWOOD.

EDWARD COCKEY AND SONS
ALSO MANUFACTURE
PURIFIERS, SCRUBBERS, CONDENSERS, AND OTHER IMPROVED GAS APPARATUS,
HAVING PATTERNS SUITABLE FOR GAS-WORKS OF DIFFERENT SIZES.

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PATENT DRY AND WATER GAS-METERS, TEST GASHOLDERS, AND APPARATUS,
"EVANS'S" PHOTOMETERS,
Experimental Meters, Minute Clocks, &c., Station Meters and Governors,
STREET-LAMP GOVERNORS AND LAVA BURNERS,
19 and 20, MARSHAM STREET, WESTMINSTER.

FIRE-CLAY GAS RETORTS,

Made of the most refractory Clay in the world, possessing extraordinary properties of contraction and expansion without cracking; having a true form, and perfect internal smoothness.

GLAZED SEWERAGE & WATER-PIPES,

Made up to five feet diameter. Vitrified Pipes, for conveying Water under pressure, made, laid, and guaranteed to stand a required pressure for six months. Every description of sanitary goods.

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A Pamphlet of Testimonials forwarded on application. Export Orders receive special attention for delivery, free on board, at Liverpool, Hull, or London. Manchester Dépôt, Mill Street, Great Ancoats; F. Tesseyman, Agent.

EDWARD BROOKE, Fieldhouse Fire-Clay Works, Huddersfield.

CROSLEY & GOLDSMITH'S

PATENT SELF-ADJUSTING & COMPENSATING GAS-METERS

CANNOT BE OVER OR UNDERCHARGED WITH WATER,

and they consequently register the quantity of Gas consumed with greater accuracy than Meters in which the Water-Line is variable.

MANUFACTURED BY

CROSLEY & CO.,

GAS-METER MANUFACTURERS,

103, SOUTHWARK BRIDGE ROAD, LONDON, S.E.

N.B. The Patent Self-Adjusting and Compensating Apparatus may be applied to the ordinary Meter.

Manufacturers of LOWE'S PATENT MOTIVE-POWER METER, for situations where there is an inadequacy of pressure to supply the special requirements of certain consumers in low grounds during the day or night.

Also, Manufacturers of EXPERIMENT METERS, GOVERNORS, MINUTE-CLOCKS, PHOTOMETERS, &c., &c., similar to those used by Mr. King, of Liverpool.

CROSLEY & CO. are also prepared to supply Gas Companies and others with

DUPLICATES of Mr. KING'S CUBIC FOOT TRANSFERRER,

similar to that manufactured by them, and verified by the ASTRONOMER ROYAL, and PROFESSOR MILLER, of Cambridge, on behalf of the Government, which was deposited by C. & Co. in the Office of the COMPTROLLER-GENERAL of the EXCHEQUER before Nov. 13, 1859, in compliance with the "Act for Regulating Measures used in Sales of Gas." They also supply

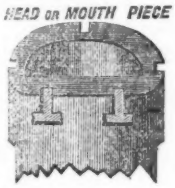
TEST GASHOLDERS,

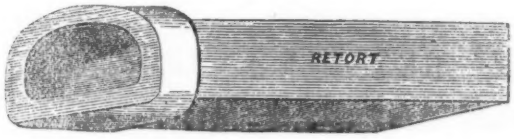
Graduated by the Standard Cubic Foot.

C. and Co. are the only house in the trade which has for years manufactured Meters according to the standard measure set forth in the 2nd Section of the "Sale of Gas Act," and which also comply with the rules laid down in the Section for testing meters. Purchasers of C. and Co.'s Meters may therefore be secured against any additional expenses being incurred in order to adapt their Meters to the requirements of the new Act.

KING BROTHERS,

STOURBRIDGE FIRE-BRICK AND RETORT WORKS.





KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them FREE FROM CRACKS AND CORRECT IN FORM. By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize.

Retort Ovens, Fire-Bricks, Guards, Saddles, Rabbitted Bars, Flues, and Quarries, are all Manufactured of the same quality of Clay.

Every Retort and Brick is branded "King Brothers, Stourbridge."

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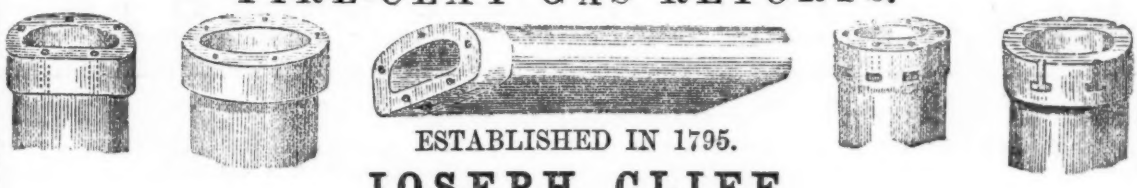

ESTABLISHED IN 1795.

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WORTLEY FIRE-BRICK WORKS, near LEEDS.

THESE RETORTS are unrivalled in excellence, being the BEST FINISHED INTERNALLY, and THE MOST CORRECT IN FORM, of any in the Kingdom. From the peculiar composition used in working up the face of the material, they are rendered unusually smooth, close, and FREE FROM SURFACE CRACKS, thus, in a great measure, preventing leakage and the adhesion of carbon to their interior surface.

To meet the yearly increasing demand of UPWARDS OF THIRTY SEASONS and to carry out the late improvements in the manufacture, the Premises have been re-erected and much enlarged, and Engineers may rely WITH CONFIDENCE on their orders being completed with a greater regard to despatch than by any other House.

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Also Manufacture and Supply

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And other Apparatus required by the Inspectors appointed in pursuance of the above Act.

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STANDARD TEST GASHOLDERS;

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AND ALL APPARATUS IN USE AT THE GAS MANUFACTORY.

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